other regulatory techniques that can affect the quality of growth (see, generally, So and Getzels, 1988, and sources cited there).

LATER LITERATURE

The later (post-1975) literature is in some ways not as interesting as the early literature. There were several dissertations, a dozen or so books, and a large number of articles. Several provided useful case studies. Others updated the early literature. A few contained some interesting evaluative material (discussed separately in Chapters 7 through 11). What has been surprisingly missing from the later literature is any sort of comprehensive look at growth management programs in general and how those programs affect the communities that adopt them. That deficiency was noted repeatedly in papers offered at a conference on research needs in the field (Brower, Godschalk, and Porter 1989).

The Urban Land Institute continued its series of publications on the subject. It included in the series a 1976 publication on the complexities of the regulatory process (Bosselman, Feurer, and Siemon 1976), although for reasons that are not clear it reserved the next volume number in the series for a later publication. The Institute published Volume 4 in the Management & Control of Growth series in 1978 with the subtitle, *Techniques in Application* (Schnidman, Silverman, and Young). That book, like the earlier ones in the series, contained a series of useful essays on various aspects of growth management. Innovative approaches to land use management, many of them quite separate from growth management, were the subject of the first section of the book. Other sections covered practical aspects of administering growth management, fiscal impact analysis, environmental issues, and, in a brief section, the implications of growth management for housing.

In 1979, ULI published *Growth and Change in Rural America*, a thoughtful analysis of the demographic, economic and other changes taking place in non-metropolitan areas (Fuguitt, Voss, and Doherty). It included some recommendations for improvement under the general heading of "growth management" (pp. 75–90). However, as in some later studies, the authors used the phrase broadly and included within that chapter tax incentives, infrastructure investment policies, land purchases, innovative zoning tools, and, interestingly, mobile home regulation (pp. 88–89).

Although the ULI discontinued the designation of books as parts of the Management & Control of Growth series after 1979, it published additions to the collection in 1986 and 1989. The 1986 book, *Growth Management: Keeping on Target?* was clearly an update of

the earlier studies (Porter). It revisited several of the communities included in the earlier studies (Petaluma, Boulder, Boca Raton, and Montgomery County) and added some new ones. It included a broader look at the social and equity issues involved in growth management than any of the earlier reports. One of the most interesting parts of the book was a short but thoughtful essay by Paul Niebanck (pp. 215–216) in which he assessed the benefits and "byproducts" of growth management. He noted great concern about one particular byproduct, summarized here. "Most dramatically, the decline in residential opportunity for poor people, for people of color, and, yes, for middle-class people, resulting from the decidedly negative effects of growth management on housing prices" (Niebanck 1986, p. 216).

Three years later, ULI published *Understanding Growth Management: Critical Issues and a Research Agenda*, based on papers from a September 1988 conference sponsored by ULI and the Center for Urban and Regional Studies at the University of North Carolina, Chapel Hill (Brower, Godschalk, and Porter 1989). As the title suggests, the focus of the book was on what society does not know about growth management and the need for further research. Most striking perhaps is the fundamental question left open, as stated by one of the participants. "Moreover, despite the plethora of Boulder studies, there has been no research analyzing whether Boulder is a better place to live as a result of its growth management program" (Godschalk and Brower 1989, p. 162).

In the same publication, in a concluding chapter outlining a proposed research agenda, Porter noted that quality of life as an area of research "has hardly been touched" (Porter 1989, p. 187). He went on to note that the field even lacks measurable standards for quality of life, in order to provide the basis of a study. In a chapter called "The ecology of 'quality of life' and urban growth," Myers noted that "the poor state of knowledge about quality of life has hampered negotiations about growth management" (1989, p. 87) and that, because "few can agree on its definition . . . it is very difficult to measure quality of life in any comprehensive fashion" (p. 87).

The principal post-1975 contribution of the American Society of Planning Officials and its successor, the American Planning Association, to the library of books on growth management was an excellent introductory legal work entitled *Constitutional Issues of Growth Management* (Godschalk et al. 1977). Developed as a teaching tool, it included a dozen illustrative case studies, with clear and careful discussions of the law related to each. It also included a good discussion of the policy issues involved in growth management, noting that, "In the final analysis, growth management plans will be judged by the people of the region and, in some cases, by the courts. Each plan will

be looked at in terms of its impact on a particular local and regional situation and in terms of its internal logic and consistency" (p. 218). The authors provided three guidelines for effective growth management plans:

- Methods employed for benchmark technical studies, impact analyses, and plan making should be systematic, rigorous, and replicable.
- Internal consistency of growth management approaches is as important as accuracy. There must be a clear relationship between the findings of the basic studies, the public purposes to be served, the plan adopted, and the regulations used to carry out the plan.
- Explicitness is a third fundamental for growth management plans. . . . such plans cannot afford to be broad-brush, general collections of possible futures (pp. 218–219).

The International City Management Association published another collection of essays, edited by John DeGrove (1991). It consisted almost entirely of short articles on major programs, most of them originally published in popular and trade journals like *Planning* and *Governing*. Although the collection included no new analytical material, it did include a useful, if somewhat disjointed, collection of articles on current issues in the field.

One work likely to be listed in the catalog of works in this field should probably not be there. Schiffman's short book, *Alternative Techniques for Managing Growth* (1989), might more appropriately be called *A Land Use Controls Primer*. It provides a succinct introduction to a variety of land use control techniques, ranging from zoning to historic preservation. It is a useful book, but it deals only peripherally with growth management as defined in this book.

This period saw the publication of a number of significant works on the state role in growth management. Chapter 6 includes its own literature review and citations to works on that subject; those are not repeated here. However, two are worthy of particular note. Robert Healy wrote an in-depth analysis of the state role in land use, first published in 1976 and updated by Healy and John Rosenberg in 1979. The two overlap considerably. Both provide a broad examination of the role of the state in land use and in depth analyses of the statewide programs in Vermont and Florida and the coastal zone program in California.

Popper also contributed an interesting work to the literature on the state role in planning and growth management in 1981. It contained the broadest policy analysis since that of Bosselman and Callies (1971). It also included a short section on the politics of state land use control.

Several dissertations examined particular growth management

programs in depth. Abe provided a rather cursory review of the state of growth management and a very brief look at the Petaluma program in her 1977 dissertation at the Claremont Graduate School. In his 1982 dissertation at Colorado State University, Snyder suggested an evaluation of state efforts ("An Evaluation of Colorado's Attempts to Cope with Rapid Growth") but actually offered an interesting and useful comparison of the growth management programs in Boulder and Westminster. He examined both the political and the practical aspects of the programs and reviewed data on their effectiveness after approximately five years of experience in Westminster and nearly ten years in Boulder.

Knaap made a careful analysis of the effects of the Portland urban growth boundary on land prices (1982) and subsequently adapted the material into an article (1985). Others have cited his work extensively (see, for example, Fischel 1990, pp. 23–24), and it provides the basis for some of the analysis in Chapter 9 of this book.

Dubbink first encountered growth management as a regional environmental planner for the California Coastal Commission (1983, p. 26). He later completed doctoral work and prepared a dissertation on growth management in one of the communities with which he had previously worked, Bolinas, and one with which he had no prior experience, San Juan Capistrano. He based the dissertation largely on personal interviews, attempting to find the motives of those implementing growth management programs, as well as some of the results. His analysis balances empathy for the subjects of his study with a critical view of the results of their efforts. He concluded that growth management largely represented futile preservation efforts of newcomers to semirural communities. He characterized the results as "anti-suburb suburbs." Because of its broad perspective, it is a particularly important contribution to the literature.

For a 1986 dissertation for the University of California at Berkeley, Greenberg conducted an extremely thorough analysis of the growth management programs of Livermore and other communities in the Amador valley. It provided a detailed history of the ups and downs of growth management politics in several communities that share a geographical location but differ greatly in their politics. The comparative political histories were particularly interesting.

A later academic contribution to the field came in the form of a working paper prepared by LeGates and Nikas for the Public Research Institute at San Francisco State University (1989). It provided a review of eleven different growth management programs in effect in cities and counties in the Bay Area. All fell within the definition of growth management used in this book. The authors also provided one of the few attempts prior to this book to place the programs in categories. The categories there ("flexible systems, point systems,

first come first served systems, and flexible criteria systems") seem less descriptive and thus less useful than those proposed in this book, but the effort of the authors to compare particular programs to similar programs in other communities is very useful.

Glickfeld and Levine, in a study sponsored by the Lincoln Institute of Land Policy, prepared a statistical analysis of the demographic and other characteristics of communities adopting growth management programs in California (1992). Although their definition of "growth management" included standard zoning techniques such as building height limits, the study provides useful demographic data on growth managing communities.

Researchers at the University of California at Berkeley contributed a number of working papers on growth management issues in the late 1980s and early 1990s. Particularly notable is a 1991 contribution of Landis. A problem with his work in using it to analyze programs in other jurisdictions is that his working definition of growth management is one that this author would apply to land use controls. It included zoning and subdivision controls, fees, and annexation and infrastructure policies (p. 5). Works by Teitz and Innes from the same Berkeley series are cited earlier under later literature on the state role (Innes 1991b).

A number of articles and books on particular aspects of land use control, such as housing policy, joined the literature in this period. The topical chapters that follow include appropriate references to significant literature on those topics. Although there has been surprisingly little literature that attempts to provide any sort of broad evaluation of growth management efforts, the last chapter cites a substantial portion of what exists. Short reports by Landis (1991) and Fischel (1990) are particularly noteworthy, as is a brief article by Benjamin Chinitz (1990).

CONCLUSION

Each of the four growth management techniques addresses somewhat different community concerns and has somewhat different effects.

Adequate public facilities requirements directly control the impacts of development on public facilities and ensure that capacity will be available to serve new development as it occurs. Such requirements indirectly phase growth because they make development most feasible in areas that already have most urban services, generally areas contiguous to existing development; for that reason, such requirements help to reduce sprawl. However, in many communities, some (or many) public facilities are available in locations relatively

remote from the community or areas that for other reasons may be low on the list of the community's priorities for development. Adequate public facilities requirements will not prevent development in such locations, nor will they halt development in a high-growth market in any location to which developers can afford to pay most of the costs of extending facilities.

Growth phasing programs directly control the timing of growth in particular locations, generally based on the availability of public facilities. Such a program can be used to reduce sprawl and is more likely to be effective in reducing sprawl than are adequate public facilities standards. However, as the examples illustrate, growth phasing programs used alone may result in the approval of projects for which most facilities are available but for which some are not.

Urban growth boundaries most effectively define the limits of urban growth and thus create a clear delineation between developed and undeveloped lands. Although such boundaries reduce contiguous sprawl, they may, if too tightly drawn, promote leapfrog development.

Rate-of-growth programs, which are the least common of the types discussed here, directly regulate the community's growth rate without particular regard to capacity. Development under such a program may occur more slowly, or more quickly, than public facility capacities would otherwise permit. Such a program does not necessarily control the location of development, and it may or may not affect the pattern of urban growth.

These regulatory techniques are analyzed in subsequent chapters of the book, together with the nonregulatory techniques presented in Chapter 5.

NOTES

1. Colo. Rev. Stat. Sec. 30-28-133(6).
2. *Associated Homebuilders of Greater Eastbay, Inc.*, v. *City of Livermore*, 18 Cal3d 582, 135 Cal Rptr 41, 557 P2d 473 (1976).
3. *Reed* v. *Planning and Zoning Commission of Chester*, 208 Conn 431, 544 A2d 1213 (1988).
4. *Robinson* v. *City of Boulder*, 190 Colo 357, 547 P2d 228 (1976); the lower court opinion, which rejected a challenge to the original, "interim" growth policy, is reproduced at pp. 237–252 in Scott, Brower, and Miner 1975b.
5. The publication date is deceptive; the article was based on remarks made at a 1985 conference. The context of the article, including the last sentence included in the quotation, make it clear that the quoted remarks are about the old system that had been replaced by the prorated system some months before the conference.
6. *P. W. Investments* v. *City of Westminster*, 655 P2d 1365 (Colo 1982).

THE LIMITS TO GROWTH MANAGEMENT:

Development Regulation in Montgomery County, Maryland

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ABSTRACT

This paper reviews and critiques the growth management system in Montgomery County, Maryland with the intent of finding generalizable lessons. An overview of the twenty year old system is followed by an analysis of its consequences and implications. The system fails to provide effective price signals, rather relying on proactive command and control policies from the county government. Moreover the system fails to raise sufficient revenue for new infrastructure. The paper suggests that an alternative, reactive, approach, which links the threads of infrastructure financing and adequate public facilities by replacing quotas with a market based approach of cost-based prices, would be more equitable, efficient, and effective in implementing county goals.

INTRODUCTION

An unacceptable quality of public facilities in fast growing communities led many to adopt a variety of growth management strategies, with varying degrees of success and numerous problems (Baldassare 1980; Popper 1988; Dalton 1989; Pollakowski and Wachter 1990; Chinitz 1990; Downs 1992; Godschalk 1992; Landis 1992; Feitelson 1993; Altshuler and Gomez-Ibanez 1993; Nelson and Duncan 1995). Communities with growth regulation schemes hope that by constricting the inflow of people, they can afford timely expenditures on new capital facilities such as roads, schools, water, sewer, and parks. For homeowners, the rationing of new development may make existing investments more valuable. Katz and Rosen (1987) and Pollakowski and Wacther (1990) have found price premiums in areas with growth controls. Schwartz et al. (1981) and Dowall (1984) have found development spillovers into neighboring, less regulated areas. These effects are in concordance with theory, which suggests as a commodity is made scarce, its price rises and substitutes are sought (White 1975, Elliott 1981, Lillydahl and Singell 1987, Thrall 1987, Sheppard 1988) the exact amount and nature each takes is an open question (Fischel 1990, Chinitz 1990), depending upon the choices available to developers and consumers. Growth management is both a political and pragmatic response to circumstances, but whether it is economically efficient locally and/or regionally depends on the nature of the program.

Financially constrained communities likely will continue attempting to control growth, but how they will do so is an open question. This paper reviews and critiques the Annual Growth Policy of Montgomery County, Maryland with the intent of finding general lessons which can be transferred to other communities. The Annual Growth Policy coordinates the timing of development in accord with the provision of adequate transportation and other public facilities. It should be noted that Montgomery has other policies which also influence the location of development and infrastructure. The General Plan "On Wedges and Corridors" (MCPD 1963) and area plans direct development to certain areas of the county (Corridors) while preserving rural areas (Wedges) through zoning and transferable development rights (Bozung

1983, Rose 1984, Nelson and Duncan 1995). Furthermore, functional plans direct the physical placement of public facilities while the Capital Improvement Program directs their timing. Considering such a broad sweep of policies is beyond the scope of a single paper. While the goals of planning, zoning, and land use regulation are quite broad, including maintaining quality of life, agricultural preservation, open space conservation, and ensuring affordable housing and economic growth, the foremost operational objective of the Annual Growth Policy is to ensure adequate public facilities, especially transportation.

As a pioneer, Montgomery has spent considerable resources attempting to perfect its growth management systems under the premise of rational planning. The thesis underlying this paper is that by examining the current state of Montgomery County's "growth management laboratory," and analyzing key policies within decision frameworks, a divergence from overriding efficiency, effectiveness, and equity goals becomes apparent. Understanding the causes and "logic" of these decisions may provide insight to a reader who can apply them to more familiar circumstances.

This paper is drawn from the author's experience working for the Montgomery County Planning Department managing growth from 1989-94, documents produced by various agencies and agents, public hearings, and discussions with current and former staff members, citizens, and members of the development community. While I have attempted to provide a third-person "objective" perspective on events and issues, the County's growth management system is exceedingly complex and can be viewed from many angles, enabling alternative conclusions.

First the paper discusses some decision frameworks which influence the implementation of a regulatory system, in particular, growth management, and which can be used for descriptive evaluation. This is followed by an overview of the American context of growth management systems, and Montgomery's place within it. The history of Montgomery's growth management rules and policies is summarized. Following is a brief description of developer-funded infrastructure options that have been proposed and implemented in the county. Next is an analysis of the impacts of the system, including intended and unintended consequences, looking

first at the model for setting growth limits, and then at a model of the interaction of transportation and land use in the County. Some lessons from Montgomery's experience are extracted and generalized. An alternative approach to the problem is suggested linking measures of transportation adequacy directly with financing, which would better serve both equity and efficiency goals than current policies.

DECISION FRAMEWORKS

Before proceeding to describe the growth management policies in Montgomery County, some of the decision frameworks which underlie the policies can be suggested. These dichotomies have been identified inductively, and by no means constitute a complete list of strata on which to classify the entire decision process. However, the spectrum discussed below are crucial to understanding the "logic" of Montgomery County's growth management system.

Proactive vs. Reactive

The first dichotomy reflects approaches to situations. In the abstract, one can either proactively attempt to identify potential outcomes, and then steer decisions toward a set of specific results, or one can react to issues as they are presented in real-time, and decide each one in turn. Neither is right for every circumstance, a mixture of them is used in varying degrees. Proactive approaches have higher planning costs, and may still miss the mark of reality, while reactive approaches may require catching-up with unanticipated circumstances. Within the growth management context, permitting or prohibiting development in advance of market demand leans heavily toward the proactive model, while a policy such as impact fees, which charges developments as they come, based on their anticipated usage of public facilities, is a more reactive model.

Categories vs. Continuum

Second, we can examine how a regulatory parameter is defined and implemented. A series of classes can be created, relevant examples include whether development in a particular geographical area is permitted or prohibited. Alternatively, a continuous approach can be

chosen, wherein a development is permitted to proceed upon the payment of a fee which depends upon its impact, the more that is paid, the more development permitted. In economic terms, with continuous demand, categories create deadweight loss, a supplier would be willing to supply and a consumer purchase at a price beneficial to both, but the transaction is prohibited because of an artificial category boundary. As the number of categories within a dimension proliferates, they inevitably approach a continuum. The proliferation of categories can be seen as "complexification," resulting in an increase in administrative costs, but the use of a continuum should not necessarily be viewed as an infinity of categories, rather it may be simply based on an elegant mathematical relationship between variables, potentially simpler than any classification with more than two categories. Again, at times both need to be used, for instance there is a qualitative difference between housing and commercial development.

Single vs. Multi-Dimensional

A third distinction falls within the nature of regulation and how rules are established. A rule can be single-dimensional; for instance, there can be a rule requiring all highways to operate at level of service "C." Alternatively, a rule may be multi-dimensional, allowing tradeoffs between criteria; for example, transportation must operate at level of service "C," this can be accomplished through some combination of highways and transit. Any system which allows either the construction of a facility or the contribution of money is at least two-dimensional. There is nothing constraining regulations to be limited to only two-dimensions of trade-off except administrative energies.

Incremental vs. Comprehensive

Next, decisions may be made incrementally, varying only one or two dimensions of a regulatory system at a time, or they may be taken comprehensively, with many dimensions in flux simultaneously. Again, combinations of both are used all of the time, larger or smaller chunks can be bit off depending on circumstances. The act of creation of Montgomery County's growth management system was by necessity fairly comprehensive, though it built on the already existing land regulation system. Its evolution has been far more incremental. On occasion there

may be a time for what Schumpeter termed "creative destruction," where an existing system is discarded and replaced in its entirety.

Coordinated vs. Fragmented

Lastly, idea generation and decision making can be more or less centralized. Montgomery County's Planning Department is in the Legislative, not in the Executive Branch of government. While decisions may be highly coordinated within either, they are rarely coordinated between the branches. The dangers of fragmentation are a lack of responsibility as well as missing of ideas which fall in the cracks between the organizations, but over-centralization may stifle new ideas if they are not supported within the monopoly organization.

CONTEXT OF GROWTH MANAGEMENT

Growth management, and more generally development regulation, is widespread in various forms throughout the United States. There are many approaches to growth management, ranging from simple development prohibitions through urban growth boundaries to exactions.

Duncan and Kelly (1991) found 19 U.S. jurisdictions with growth management systems and adequate public facilities ordinances similar to those used in Montgomery, though Montgomery County's growth phasing methods were the most sophisticated and complex. This suggests that if the future is growth management, an examination of Montgomery County shows one possible scenario. Is there reason to expect other areas to follow Montgomery's lead? While the County began its program principally as a response to congestion, recent years have seen a thrust of regulatory expansion in the environmental arena. Though enforcement of environmental quality standards will become tighter or looser in any given year with the political winds, the long term trend is toward more regulation. Transportation control measures are a key tool advocated to reduce emissions, and growth management is one potential measure.

Growth management by development exaction and impact fees is widespread. Bauman and Ethier (1987) surveyed American communities and found a majority of communities with on-site exactions, a smaller number with off-site exactions, and a similar number with impact fees. Moreover, growth management is not confined to the local level, states have been the

center of much recent expansion in managed growth policies (Bollens 1991, Gale 1991, Innes 1991). The methods they choose, while necessarily structured differently, will be based on one regulatory model or another.

The growth management literature describes the County's program as a leader (Hamblin 1992; Savage 1993; Ewing 1994). Though in theory the program deals with all public facilities, in practice transportation service standards drive it (Winick 1985; Wickstrom and Winick 1986). Winick (1989) enumerates features needed for implementing a growth management system for transportation purposes: a political mandate, a planning and regulatory framework, a measurement approach, standards of tolerable congestion, criteria for which transportation improvements to consider, procedures to monitor and forecast growth, and an open and public process.

One key feature missing from this list is an infrastructure financing mechanism. Inadequacy is caused by either too much demand or not enough supply given an adequacy standard. If there is agreement that the benefits of infrastructure expansion outweigh the costs, then this lack of supply can be remedied with money. As described below in the section on infrastructure financing, in Montgomery County there have been fits and starts toward obtaining financing for new transportation facilities, principally but not entirely limited to roadways, from new development, but no comprehensive program.

HISTORICAL OVERVIEW

Growth management in Montgomery County began in 1974 (MCPD 1974), with a report recommending the presence of adequate public facilities for new development, enactment of development district legislation, and a staging policy in each local area master plan. Through the mid 1970's, the theory of growth management was presented to the public, though no regulatory system was implemented (MCPD 1974-77). Briefly, the theory was built upon the idea that an area has a carrying capacity (for instance, only so much traffic can be tolerated) (Schneider et al. 1978), which depends upon the level of infrastructure (such as roadway capacity) (see Figure 1).

Since only a limited amount of infrastructure was actually deployed at any given time, only a limited amount of development could be permitted while maintaining adequacy. The system was to be implemented with computerized models tracking development, demographics, traffic, and environmental impacts.

The method to regulate development established "staging ceilings" in each policy area in the County. Figure 2 shows the current policy areas. The growth policy defines staging ceilings as the number of permitted jobs or housing units in that area. These staging ceilings are set to ensure the satisfaction of transportation level of service standards. Areas with too much traffic were placed in moratoria for new jobs, housing, or both; while areas with less congestion than their standard would be allowed more development. Transportation, though nominally one of several public facilities considered for growth management, clearly became the critical constraint. How congestion was measured and against what standards this measurement was applied were critical issues to face the system over the next decade.

In the terminology of the day, this approach relied on "police" powers to control private development rather than "purse" powers to provide public facilities. Apparently, and somewhat surprisingly, no written consideration was given to using taxing powers to raise revenue from private development to directly fund public facilities. While the Planning Board did not have taxing powers, it did have regulatory powers.

In January 1980, a proposed *Comprehensive Staging Plan*, amending the General Plan, was proposed by the Planning Board (MCPD 1980), but was not adopted by the County Council. This was followed by the similarly titled *Comprehensive Planning Policies* (MCPD 1982-85), an annual regulatory report recommending staging ceilings in each area, the ceilings were adopted and enforced as "guidelines" by the Planning Board, not the County Council, and thus had less legal force than a Plan. By 1986, the use of staging ceilings was seen as a major power base. The *Interim Growth Policy* (MCPD 1986), and then the *Annual Growth Policy* (MCPD 1987-94) gave a greater role to the County Executive and the County Council in managing growth, and provided a stronger legal structure to defend the system from lawsuits.

In 1993 a recession led to a shortfall in tax revenues and cutbacks in infrastructure financing for the county and state capital improvement programs. Because the amount of permitted development depends on the number of roads laid (or anticipated to be laid), staging ceilings were reduced. This reduction increased the costs of development (in many cases prohibiting it altogether) and a vicious circle was created. To exit this pattern, it was argued that the growth policy should stimulate (or at least facilitate) growth in a downturn as well as restrict it during an expansion. After the expected political wrangling, a narrow amendment to the Annual Growth Policy was passed by which a limited amount of new residential approvals would be permitted in each policy area, regardless of moratorium status, conditioned on a voluntary "development approval payment," to be used for new infrastructure.

INFRASTRUCTURE FINANCING

Primarily, the County's transportation infrastructure is financed through general revenue or by higher levels of government using gas taxes and other revenue sources. But in addition to the development approval payment there are several mechanisms for privately funded transportation: infrastructure proffers, trip mitigation, impact taxes, and development districts.

Developer Funded Roads

The first private system is essentially a proffers system, a developer may voluntarily provide infrastructure to meet transportation level of service requirements when their area is in moratorium. This has resulted in the formation of "road clubs," a contract signed by a group of developers and the County to collectively finance and build transportation infrastructure (roads), as well as privately funded roadway and intersection improvements (Nelson and Duncan 1995). However, this option is only open to developers, or a coalition of developers, of sufficient size to be able to afford major infrastructure.

Trip Mitigation

Alternatively, as described by Ferguson (1990), a developer may enter into a trip mitigation program in order to attain approval. These programs include ride-matching, shuttle

services, constructing park-and-ride lots, transit subsidies, and other measures which supposedly get vehicles off roads. Their estimated cost (MCPD, unpublished) is $500 per trip per year (somewhat less than $5000 for a ten year program). By mitigating peak period, peak direction trips, ideally the developer will eliminate the bulk of the traffic impact of the development. These programs last ten years, after which it is hoped that the county will assume operation of successful traffic mitigation programs. The earliest programs are now expiring, but it is unclear whether the county will assume their operation.

Impact Fees/Taxes

Next, development impact fees (now taxes) are required in two areas of the county (Heath et al. 1988). The program is limited to two of the areas in subdivision moratorium at the time of designation by the County Council (Germantown and Fairland/White Oak). While the test for adequate public facilities is at subdivision, the impact fees are assessed at building permit. The fees are determined based on a top-down allocation of the total cost of unbuilt infrastructure divided by the number of unbuilt development units (considering trip generation and trip length characteristics), the impact fee's share of the cost of unbuilt infrastructure is capped at 50%.

Initially the developments which paid the impact fee were approved before the moratorium was imposed or had participated in a road club. Later, with infrastructure funded by the impact fee, the moratorium would be lifted (as happened in Germantown) and development could be approved under normal means. But this development would also pay the impact fee, in order to finance further road construction. Though roads were supposed to be programmed based on anticipated impact fee revenue, the funding of many roads slipped with the recession, so while Germantown has received new transportation infrastructure, Fairland/White Oak has not, and is still in moratorium. The fees are about $1500 per single family unit, far less than the cost of a traffic mitigation program ($5000).

Development Districts

Last, there has been legislation passed which will permit the formation of development districts. These would enable development in a designated area to proceed after paying into a fund which is supposed to cover the construction of master-planned infrastructure. This has yet to be implemented in any area of Montgomery County.

A MODEL FOR SETTING GROWTH LIMITS

A brief discussion of how staging ceilings are established is in order, the current process is illustrated in the flowchart of Figure 3 (MCPD 1994), with underlying equations given in End Note 1. While much of the description may seem to be technical jargon, the techniques used and the philosophy behind them have profound policy implications.

The objective is to obtain a land use pattern which results in traffic congestion and transit accessibility as close to the transportation level of service standard as possible. Being too congested or too uncongested (or too inaccessible or too accessible) are equally bad in this framework, as one implies excess delay (travel costs), and the other implies excess investment in infrastructure (construction and operation costs) for the amount of permitted development. These development capacities are estimated by transportation modelers working for the Planning Department, recommended to the Planning Board, which adjusts and forwards them to the County Council. The process is reminiscent of the "rational planning" model.

Step 1 involves positing a land use pattern, namely the number of jobs and housing units in each geographic policy area, given a fixed transportation network (that which is fully funded within the first four years of the County's Capital Improvement Program or Maryland's Consolidated Transportation Program) and an areawide average level of service standard.

Each area's total is allocated to traffic zones in step 2. These zonal land uses are put into a travel demand model in step 3 (Levinson and Kumar 1994c,d 1995a). While the ability to forecast is imperfect, in this system it is imperative.

In step 4 the total transportation level of service for each policy area is calculated. The total transportation level of service is analogous to the grade point average computed on a report

card, with the level of service being a grade (A to E) and the mode share being a weight (like credit hours) from 0 to 1. But here the goal is not maximization of grades, but rather achieving a median grade (numerically a 0.585 -- a number selected to minimize changes from an earlier regulatory process). To extend the analogy, getting grades which are too high implies that you studied too hard, to the detriment of other activities; high grades have a high opportunity cost.

Step 5 takes the total transportation level of service calculated for each area and compares it with a standard. The difference between the modeled level of service and the standard for each area is calculated and weighted by travel in that area. The "optimal" land use from this transportation perspective is no difference between the modeled level of service and the standard.

The last step is the convergence test. Unless the land use is optimal from a transportation perspective, another iteration should be performed. In practice the convergence test is that staff runs out of time to perform more runs of the transportation model or other constraints prevent improvement in the total system score. The term "optimal" implies a lot, it takes as given exogenous standards and infrastructure investment, assumes that all of the land use permitted is constructed, and assumes that the model is a correct representation of human decision making.

Other constraints include the decision rule that staging ceilings in a policy area should only change if there is a transportation improvement in that area (or in an immediately adjacent area). Thus changes in level of service due to "through-trips" (trips where neither end is generated in the policy area) are not immediately considered in this process, but rather through a process dubbed "catch-up." Also zoning ceilings cannot be exceeded by staging ceilings.

Staging ceilings are adjusted upward if the modeled level of service in an area is better than the standard and downward if modeled level of service is worse than the standard. However the solution space of possible staging ceilings is large. There are 26 policy areas; in each area, the staging ceiling consists of jobs (the employment capacity of buildings) and housing units. In a typical area the zoning holding capacity equals 15,000 jobs and 10,000 houses. The number of possible job and housing combinations in that area is 15,000 x 10,000 = 150,000,000. For the county, the number of possible staging ceilings is the number in each area multiplied by that in

each other area ~ 150,000,000[26]. To illustrate the size of the problem, if the computer could test each scenario in one second (and model runs are currently measured in hours), testing every scenario would take many orders of magnitude longer the age of the universe.

While there are more efficient approaches than strict enumeration, so long as the interactions between policy areas are considered, the problem is not possible to solve in an optimal fashion because of computational intractability, in linear programming terminology it is NP-Hard (Gass 1985). What is left is a heuristic sub-optimal approach which results in staging ceilings that deny approval to some developments while enabling others to proceed, even if the reverse would result in better transportation level of service.

These potentially counter-intuitive results are entirely due to proactive planning, attempting to determine the best solution in advance. It therefore raises the question of whether, since there is no guarantee of better performance, the proactive approach subjecting development to quotas and queues should be preferred to a reactive approach, such as impact fees, where each development is charged based on its economic consequences.

A MODEL OF TRANSPORTATION AND LAND USE

Figure 4 shows the feedback relationship between the transportation and land use variables within the Montgomery County growth management system. The arrows between the boxes show a relationship; a plus (+) or minus (-) sign indicates whether they are believed to be positively or negatively associated. While this figure has ten boxes and twenty-two lines, and is thus a simplification of the real world system, I believe it is instructive to examine these relationships. By reviewing the system in this manner its strengths and weaknesses can be discovered. Issues which should be kept in mind: (1) are the relationships continuous or discontinuous -- and which is more appropriate? (2) are the signs on the relationships correct? and (3) are there other relationships which are not considered?

The growth management system regulates the amount of development, which can be either housing units or jobs (the employment capacity of buildings). The amount of development is positively impacted by the land value, or the anticipated market value of the

developed land, and negatively affected by the government imposed cost on development. An increase in the amount of development increases in absolute terms the demand for both auto and transit, although the amount depends on a variety of factors. An increase in the amount of development also increases the accessibility provided by the transportation network (both auto and transit).

Presumably the government imposed cost of development (particularly if it exacts a tax, a piece of infrastructure, or even a transportation demand management program) increases the amount of transportation capacity available (roadway or transit). Although if it is just making development wait in a queue, there is no gain, only a deadweight loss -- a key weakness of the current system. It should be noted that public planning may have other purposes than accommodating development, so the deadweight loss needs to be traded off against other gains. In the case of lumpy infrastructure investment, smoothing the development cycle's overbuilding and "crashes," just as in macro-economics, may have long term advantages.

Nevertheless, as long as road pricing remains unimplemented on arterial class roads, those roads are a public responsibility. And as new development is a major factor in new travel demand, the equity and efficiency issues here are not whether there should be some charge on new development, but rather how that charge is levied, and what share of new infrastructure costs should be borne by new development as opposed to the existing population.

Auto demand (in vehicle kilometers traveled for instance) is positively influenced by both highway accessibility and the amount of development, and negatively affected by the amount of transit capacity provided (although probably only to a small amount). However, increased auto demand will result in increased roadway congestion. A similar structure exists for transit. Transit demand is positively affected by the amount of development and transit accessibility, but generally reduced with increases in roadway capacity.

The use of transit accessibility raises an interesting question about the appropriateness of using congestion as the measure of roadway level of service. The benefit of a transportation system can be measured using accessibility (rather than mobility, or its converse, congestion),

which is capitalized in land values: accessibility being the amount of opportunities that can be reached in a given unit of time, congestion being the delay (or some surrogate measure) on a given link or set of links. However accessibility and congestion (slowness) are typically positively correlated (Levinson 1996; Levinson and Kumar 1996). Thus the areas with the highest roadway accessibility, where a resident can reach the most jobs in the least time, are also the areas with the highest congestion -- the decrease in trip distance outweighs the decrease in speed.

The congestion measure was designed based on the idea of carrying capacity (shown in Figure 1), in this case applied to transportation. For a specific link or intersection, capacity is the flow of traffic beyond which queues form (delay becomes excessive), but capacity can only be exceeded for a limited period of time, otherwise queues would grow without end. While there may be an economically efficient level of congestion, where the costs of delay to travelers are balanced by the costs of added capacity, the efficient level of congestion depends on so many factors (for instance the value of time for each individual, the cost of land, the cost of construction, the benefit of increased accessibility, and interest rates) one should not expect that they result in exactly the same tradeoff point (level of service) system-wide. However, on a facility-specific basis there is more hope, the cost of facility expansion can be priced, as can the costs of delay on that facility. Application of a system-wide standard to each facility in the network will result in spending more money to remedy expensive problems, those links where the optimal trade-off point of expansion vs. acceptance of delay is at a more congested point. Similarly, this will result in not spending enough on inexpensive expansions, where the efficient standard should be less congested. Assuming a generic capacity or level of service standard for all links is thus inefficient. However, the use of congestion (level of service) as a red flag to begin a benefit/cost analysis of a local improvement may be worthwhile.

In an analogous situation to developers waiting for approval, commuters sitting in traffic queues have an associated deadweight loss (some have money and would pay for less delay, others would not travel if they were charged for traveling (or compensated for not traveling) --

but no mechanism exists for enabling these transactions). As congestion becomes intolerable, travelers switch time-of-day, mode, destination, activity sequence and route, and in the longer term, they relocate. An important feedback in the urban system is human rationality in travel and location decisions.

Thus (temporarily ignoring transit) the County government is imposing the highest costs on new housing and employment development in the places with the highest congestion, precisely the locations where government should encourage development to take advantage of the correlated access to jobs and housing. Montgomery County attempts to encourage this development through transit's role in the equation and the positive association between roadway and transit accessibility. In the growth management system, higher transit accessibility raises the effective amount of roadway congestion that is acceptable. Nevertheless, it is still problematic to consider congestion, and in particular volume-to-capacity ratios, as the measure of roadway level of service. Perhaps a more economically oriented measure such as change in consumer surplus, expected travel cost, or accessibility would make more sense for either optimizing land use given a network, optimizing the network given a land use pattern, or optimizing both together.

Reviewing the initial issues: first, are the relationships continuous or discontinuous -- and which is more appropriate? The relationships are generally continuous now, except for the government imposed cost on development, which is discontinuous and not always predictable in value, causing a deadweight loss as developers wait in queues. Second, are the signs on the relationships correct? They seem to be, except perhaps congestion raising the cost of development. Third, are there other relationships which are not considered? A direct relationship between roadway accessibility and the government imposed cost of development, along the lines of a value capture or benefit assessment approach (Stopher 1993), which taxes change in property values due to changes accessibility could be considered.

LESSONS

After delving into the depths of Montgomery County's regulatory system looking at its history and the models it utilizes for setting growth ceilings and for understanding and directing

how those ceilings interact with the transportation and land use systems, can we emerge with some generalizable lessons, transferable to other communities? While Montgomery County is certainly not typical of most communities today, it is larger, richer, and more pro-government, it has also implemented many planning ideas far earlier than other areas. This lead time provides an opportunity for evaluation before emulation. Though some of the mistakes may appear obvious in retrospect, they were not at the time, or they would not have been made.

Dividing Responsibility

The political structure of an independent planning commission and department, which shaped the historical path on which Montgomery County embarked, evolved from the 1920's good government movement. But putting taxing powers in the hands of the County Council and Executive and regulatory powers over development in an independent Planning Commission resulted in growth policy decisions which did not even consider the taxation alternative. As a consequence, there are a hodge-podge of infrastructure financing systems being implemented by the Executive without a planning outlook and plans being created without financing mechanisms.

Categorizing the Continuous

Initially, Montgomery County's growth management system was constructed by creating various classes of things such as policy areas and transit level of service groups. The boundaries of these classes are artificial, but their implications are quite real. Identical developments across the street from each other may either proceed or must wait in a queue for years based on these boundaries. While progress has been made in moving toward continuous measures, such as replacing transit level of service groups with a total transportation level of service equation, the inherent structure of most planning systems, including growth management and zoning, encompasses artificial classes and boundaries.

Setting Single-Dimensional Standards

It is inefficient from a broader systems perspective to have a single level of service standard on roads, ignoring the differing costs of expansion of unique facilities. Decisions have both costs and benefits, both must be weighed to reach an efficient and equitable result. *A priori*

standards which do not consider all tradeoffs along multiple dimensions (for example: between highways and transit, between costs of delay and construction, or between transportation and non-transportation investments) should be suspect. While some progress has been made in recognizing the trade offs between highways and transit, the costs and benefits of new construction and inter-sectoral comparison are dealt with only in a cursory and ad hoc manner.

Choosing Measures of Effectiveness

Montgomery County, like many other areas, chose roadway congestion rather than accessibility as its measure of effectiveness. But which is better: a trip at level of service "F" for its entire 15 minutes, or one of 45 minutes at level of service "C." The growth regulations and congestion standards were imposed from the top; little research has been undertaken into what level of service is actually acceptable to the county's population. Surprisingly, Table 1, derived from a 1991 travel survey conducted in Montgomery County, shows that 84.3% of survey respondents rate their commute as good or acceptable; this while between one-third and two-thirds of the county is in development moratorium in any given year because traffic is deemed unacceptable. Being in moratorium implies that too much development has been permitted, in other words, there is already too much traffic. If there really were too much traffic, one would expect fewer respondents rating their commute so highly.

Planning "Rationally"

Montgomery County has placed heavy reliance on the "rational planning" model. It was noted earlier in this paper that the ability to forecast is imperfect, but imperative. The solution to this paradox may not be better behavioral transportation and land use models or more data, but eliminating the overarching dependence on those complex models. This reliance on models and analysis methods to manage growth, and determine its optimal levels, recalls Hayek's (1989) "Fatal Conceit," the belief that given enough information, an optimal allocation of anything is possible. In the abstract this may be true, but "At the same time, there are few today who will defend the performance of the Soviet planning system, whose targets and allocations have broken upon the shoals of economies too complex for the most supercharged computers (Sayer

and Walker 1992)." Most decision makers in the county do not view the system as analogous to the central planning historically associated with the eastern bloc, yet conceptually, that is what a strict interpretation of the growth policy law requires - excepting some ad hoc provisions. The future is not predictable in sufficient detail for these computer models to competently guide long term investment decisions.

Bringing Distant Dangers Near

We finally come to the proactive vs. reactive planning issue. Montgomery County has been firmly in the camp of proactive planning, attempting to comprehensively direct both the timing and placement of development. But such direction creates inefficiencies and inequities: a development trapped in a moratorium creates a dead-weight loss, while a development in a non-moratorium area does not recover infrastructure costs. The result is an infrastructure funding shortfall. Because the transportation system, including traveler's short and long term responses, is so elastic, and the idea of rigid capacities so flawed, it casts doubt on the need to allocate land use ceilings in advance. Table 2 shows duration of moratoria by policy area. The "temporary" nature of moratoria has lasted a considerable time in some areas, with no solution coming. The current system "brings distant dangers near," planning for too many contingencies by constraining current opportunities.

"Just-in-time" has become a watchword in manufacturing, the idea underlying it should be considered in planning as well. Clearly infrastructure planning, engineering and construction occurs on the order of years rather than the hours and days of manufacturing. To apply "just-in-time" does not mean collapsing the infrastructure cycle to something on the order of manufacturing, but in addition to shrinking that time, building in response to a demand which pays its full cost rather than (1) subsidizing transportation in advance of a speculated demand, or (2) building infrastructure long after congestion has become intolerable (and economically inefficient) and new development has been placed in a multi-year moratorium.

CONCLUSION

Our initial evaluation test was whether the system managed growth or ensured adequate facilities. Surely it has managed growth, though if it is for the better is open to debate. It has increased the price of housing in Montgomery County (Pollakowski and Wachter 1990). Has the system kept congestion in check or matched the provision of public facilities with private demand? The evidence indicates not, traffic volumes have grown, vehicle kilometers traveled have grown, and the number of trips has grown faster than the supply of new infrastructure, due both to behavioral changes and additional development (Levinson and Kumar 1994a,b). However, in parts of metropolitan Washington both with and without growth management, despite rising congestion and lengthening trips, journey to work travel times have not increased for thirty years and average speeds have risen over that time, outcomes associated with the suburbanization of employment, indicating that perhaps growth did not need to be so centrally controlled after all. The extent to which growth moratoria have actually prevented (or exacerbated) the rise in congestion is unknown. Neighboring counties do not have such stringent growth controls, and hence residential development in the outer suburbs, provoked by Montgomery's growth controls may make congestion in Montgomery County worse than would have happened if that development had occurred within the county. While some use this as an argument for more regional coordination (read regulation), I suggest that it better supports the case for less local regulation, a reactive rather than proactive approach.

This paper has made several arguments for change. First, the county should reassess how transportation adequacy is defined, changing from a capacity / congestion based measure focused on mobility to an accessibility measure which considers how well the transportation system serves desired destinations, the opportunities associated with development. Second, countywide level of service standards which ignore costs create economic inefficiencies which can be avoided by looking at the costs and benefits of individual projects, both within and outside the transportation network. Third, many of the problems of proactive growth management, in particular its deadweight losses and the need for reliance on a model and modelers to establish

(sub-optimal) quotas for new development, can be obviated if the current allocation system is replaced by a comprehensive impact tax system. The theory and practice of impact fees has been discussed at length elsewhere (Nelson 1989), so only its relative advantages will be described here. By setting a price for development and then reacting to development by building infrastructure, government will be spending both the public and private sector's resources more efficiently than by proactively building transportation "on spec." or constantly playing catch-up with an artificial, single-dimensional transportation level of service standard. Adequate infrastructure, as now, would depend on proper capital budgeting. But a new signal to government is introduced, the sum of tax revenue raised or anticipated to be raised in an area. Proper signals are also provided to developers, in that development is encouraged in some areas through lower taxes, where little new infrastructure is needed, or discouraged via higher payments. This reactive impact tax approach still achieves the operational objective of the growth management system, ensuring transportation adequacy (however defined), while enabling development to proceed when it pays for the economic costs its imposes on local government.

What are the prospects for change? Change will not come immediately, the forces for the status quo are strong: citizens opposing any development, the planning bureaucracies, the lawyers who negotiate agreements, developers who already have approvals (hoping to deny competition), and landowners whose land price has risen because of moratoria in other areas. Those opposing growth management as it is currently manifested, generally the losers in the current system, may or may not see a direct infrastructure financing system as better. While uncertainty will be eliminated, a new charge will be imposed. Probably the most likely path of change will come from a court challenge. Though the Annual Growth Policy has been sustained in earlier challenges, moratoria on new subdivision approvals for longer than a decade suggest a taking.

AUTHOR'S NOTE

The author would like to acknowledge the help of the staff of the Montgomery County Planning Department, with whom he worked while managing growth for five years, most of whom now realize the problem but are constrained by political forces from solving it. He also thanks Elizabeth Deakin, William Garrison, Mark Hansen, Chris Winters, Ajay Kumar, and Karl Moritz for their helpful comments on earlier drafts of this paper. The views, opinions, and errors in this paper are solely those of the author, and not that of Montgomery County's Planning Department, Planning Board, Council, or Government or any of the reviewers.

END NOTES

There are a number of equations behind the growth management system, they are given below. The total transportation level of service is calculated using the following equation applied to the results of the model:

$$(1)\quad TTLOS_a = \sum_{i=1}^{I} LOS_{ai} MS_{ai}$$

where:
TTLOSa = total transportation level of service in area a
LOSai = Level of Service in area a by Mode i (i=1: Highway, i=2: Transit)
[LOS: A=0.00-0.22, B=0.22-0.44, C=0.44-0.67, D=0.67-0.89, E=0.89-1.11, F=1.11-]
MSai = Mode Share in area a by mode i (in mode set I).

Mode shares are subject to equation (2), requiring they sum to unity:

$$(2)\quad 1 = \sum_{i=1}^{I} MS_{ai}$$

Level of service for highways is defined using an average congestion index, equation (3) which is a vehicle miles of travel weighted volume to capacity ratio:

$$(3)\ LOS_{ah} = \sum_{l=1}^{L} \frac{Ql}{Qol} \left(\frac{VMTl}{\sum_{l=1}^{L} VMTl} \right)$$

where:
LOSah = level of service by automobile in area a of area set A, measured by average congestion index
Ql = flow (volume) on link l of set of links L (vehicles per hour)
Qol = capacity on link l (vehicles per hour)

annual growth policy

A new vision for managing growth in Montgomery County

final draft

County Council to Hold Growth Policy "Teach-in"

The Montgomery County Council will kick off a full fall's worth of activity around revisions to the County's Annual Growth Policy with a "teach-in" on Saturday, September 13, from 9:30 AM to 1 PM at the Council Office Building, 100 Maryland Avenue in Rockville, 3rd floor hearing room.

The teach-in, which is free and open to the public, will include speakers and small-group sessions to discuss the various factors that impact the Annual Growth Policy, which is the County's blueprint for staging Master Planned growth. Among the issues to be discussed will be the land use approval process, overall development, traffic congestion, school overcrowding, housing and economic development.

"This fall, the Council will make decisions on our Annual Growth Policy which will profoundly affect our quality of life and vitality as a County," said Council President Michael

see page 16

In 1973, Montgomery County adopted a new tool, the Adequate Public Facilities Ordinance, to match the pace of growth with the provision of public facilities. Thirty years later, the County is again looking at how to best manage growth and its effects on road congestion and school crowding.

Thirty years ago, Montgomery County was facing a difficult challenge: how to provide the public facilities (roads, schools, water and sewer, and other services) needed to meet the demands of rapid growth. Since the 1930s, the County's population had been doubling every decade so that by 1973, Montgomery County was home to 176,000 households and 222,000 jobs. That year, the County saw the addition of 7,900 new housing units and almost 18,000 additional jobs. Public facilities, especially sewerage facilities, had reached a point that no more growth could be supported.

Several years earlier, Montgomery County had adopted a revolutionary General Plan containing a vision for accommodating future growth while preserving much of the County's agricultural and open space. Titled "...On Wedges and Corridors," the General Plan called for concentrating growth in corridors well-served by transportation – such as along I-270 and the planned Metro Red Line – and away from the "wedges" of rural land in the western County and along Rock Creek.

Not long after the adoption of the General Plan, the United States Supreme Court upheld the constitutionality of a new tool to help local governments cope with rapid growth: adequate public facilities ordinances (APFO). An APFO allows localities to delay the approval of new development until necessary roads, schools and other facilities are in place. In 1973, Montgomery County adopted its own APFO.

Montgomery County's APFO states that the Montgomery County Planning Board may not approve a new subdivision unless it finds that public facilities are "adequate." The public facilities covered by the ordinance are transportation, public schools, water and sewerage facilities, and police, fire and health services. There are two main questions that the ordinance asks: what, exactly, does "adequate" mean? and what happens when public facilities are not adequate? Since 1986, the answers to those questions for transportation and school facilities have been in the Annual Growth Policy, or AGP.

annual growth policy

The Montgomery County Council directed the Montgomery County Planning Board to prepare a "top-to-bottom" review of the AGP in 2003. Over the past several months, the Planning Board has been examining the County's ability to support growth with public facilities. The Planning Board has concluded that fundamental changes to the Annual Growth Policy are necessary.

A "Top-to-Bottom" Review

The AGP is a resolution adopted annually by the Montgomery County Council that contains "the guidelines for the administration of the adequate public facilities ordinance" for transportation and schools. How congested are the roads? How crowded are our schools? The AGP does not regulate the amount, type, or location of development, but rather regulates the *pace* of development. The AGP sets the rules for measuring adequacy, and for determining how much additional development can be approved at any particular time.

The AGP does not regulate development in the cities of Gaithersburg and Rockville. Both Gaithersburg and Rockville have their own planning and zoning authority and are responsible for regulating the pace of growth within their boundaries.

2003: Transforming the AGP

Almost two years ago, the Montgomery County Council was looking at proposals for changing the Annual Growth Policy. They concluded that the current AGP was no longer working as well as it should. Among the concerns raised:

- If the AGP is working, why are our roads so congested? Why are our schools so crowded?
- The AGP's complicated formulas for measuring "adequacy" are out of touch with the experiences of County residents.
- The AGP has too many exceptions, allowing development to be approved even when facilities aren't adequate.
- The basic AGP framework was developed in the 1980s – a period of much more rapid growth than now. In 2003, most of the development in Montgomery County has already occurred, or is already approved.
- Since 1973, many other localities have adopted adequate public facilities ordinances – perhaps they can teach us something.

To help address these concerns, the Montgomery County Council directed the Montgomery County Planning Board to prepare a "top-to-bottom" review of the AGP in 2003. Over the past several months, the Planning Board has been examining the County's ability to support growth with public facilities. The Planning Board has concluded that fundamental changes to the Annual Growth Policy are necessary.

Following the delivery of staff analyses in early May, the Planning Board held two public forums (in May and in July) and six public worksessions. The result of this effort is a new approach for managing growth in Montgomery County. This document outlines the Montgomery County Planning Board's findings and its new vision for the Annual Growth Policy.

The Planning Board transmitted these recommendations to the County Executive and County Council on August 6, 2003. The public is invited to learn more about how Montgomery County plans for growth at a "teach-in" on Saturday, September 13 from 9:30 AM to 1 PM at the Council Office Building in Rockville. The teach-in will be televised on County Cable Montgomery Channel 6. The Council will hold public hearings on the growth policy on the evenings of September 16

The Current AGP

and 18, and growth issues will be on the agenda when the Council holds its next "town hall" meeting on September 24.

The Current AGP: How Much Development Can Be Approved?

The Annual Growth Policy contains the rules for determining if public facilities are "adequate" to allow the Planning Board to continue to approve additional development.

The School Adequacy Test

The guidelines used to evaluate school adequacy incorporate Montgomery County Public Schools enrollment projections, existing capacities of schools and any additional capacity (additions and new schools) that is programmed. The school system's 23 high school clusters are the geographic areas evaluated each year in the school test. Elementary, middle, and high school capacities in each cluster are evaluated separately in the AGP. If a cluster's enrollment exceeds capacity, space available in adjacent clusters is factored in before a subdivision moratorium is declared.

The AGP test for schools looks five years ahead in its evaluation of facility capacities. This is the same time period used for evaluating road capacities. The five-year period represents the average length of time it will take a development plan to proceed through the governmental and construction phases to occupancy and, hence, the generation of additional students (or traffic on the roads).

The AGP school evaluation process enables the County Council to take enrollment trends and capital projects into account when deciding whether or not to allow approval of additional residential subdivisions in the coming year. Each year, the new MCPS enrollment forecast and County Council adopted capital improvements program are factored into the evaluation of facility space five years in the future. By July 15 of each year, the County Council must adopt the AGP for the subsequent fiscal year. The results of the AGP schools test direct the Montgomery County Planning Board to either allow or not allow subdivision approvals in the 23 high school cluster areas during that fiscal year. In FY2002, the Damascus cluster was briefly closed to subdivision approvals based on inadequate school capacity.

The Water and Sewerage Facilities Test

Water and sewerage facilities are considered adequate if the property being subdivided is in category 1, 2 or 3 (service planned within two years) in the County's Ten Year Water and Sewer Plan. Police, fire and health facilities are assumed adequate unless the appropriate agency identifies a problem with a particular subdivision. This has never happened to date.

The Transportation Facilities Adequacy Test

The transportation test is administered on a policy area and a local area basis. For Policy Area Transportation Review, the County is divided into 27 policy areas plus the cities of Rockville and Gaithersburg. For each policy area, the AGP calculates the amount of development (expressed in jobs and housing units) that can be supported by the existing and programmed (first five years of the CIP) transportation network. This maximum amount of development that can be approved by

annual growth policy

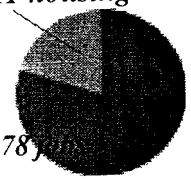
Public facilities tested by the adequate public facilities ordinance (APFO) are transportation, schools, water and sewerage, and police, fire and health facilities. The Annual Growth Policy (AGP) is focused on transportation and school facilities.

Montgomery County's adequate public facilities ordinance does not apply in the cities of Rockville and Gaithersburg, as these cities have the responsibility to manage growth within their boundaries.

annual growth policy

Amount of Approved Development

31,111 housing units



125,578 jobs

as of July 31, 2003

Top 10 Locations of Approved Commercial Development

Area	Jobs
*Rockville City**	*31,248*
R & D Village	19,014
*Gaithersburg City**	*17,234*
Germantown East	10,735
Germantown West	9,302
North Bethesda	6,384
Silver Spring CBD	4,126
Clarksburg	3,819
Potomac	3,605
Fairland/White Oak	3,435

Top 10 Locations of Approved Residential Development

Area	Units
Clarksburg	6,724
*Rockville City**	*4,239*
Fairland/White Oak	1,633
Germantown West	1,603
Aspen Hill	1,585
North Bethesda	1,437
Bethesda CBD	1,237
Germantown Town Ctr	1,165
Friendship Heights	1,106
R&D Village	1,013

**Montgomery County does not control growth in these areas.*

The Current AGP

the Planning Board during the following year is called the policy area's staging ceiling, and is adopted each July by the County Council.

If the Planning Board can approve additional development in an area (that is, when the staging ceiling has not yet been reached), the area is said to have positive net remaining capacity. If more development has been approved than can be supported by a policy area's transportation network (that is, the staging ceiling has been exceeded), the area is said to have negative net remaining capacity, and is in moratorium for new subdivision approvals. Previously approved developments can still move forward.

The pipeline of approved developments is the list of development projects which have passed their AGP tests, but have not yet been constructed. There are currently more than 100,000 jobs and 25,000 housing units in the pipeline. Once a project is approved, it retains the "rights" to that capacity for between 5 and 12 years, thus potentially putting the policy area in a moratorium and preventing projects from being approved.

New approvals can occur in policy areas that are otherwise in moratorium through several procedures. These are:

1. *The Special Ceiling Allocation for Affordable Housing:* permits a limited amount of housing to be approved if the project contains a significant affordable housing component.

2. *De Minimis Development:* projects generating five or fewer weekday peak-hour automobile trips can be approved in moratorium areas.

3. *Developer Participation:* permits projects to be approved if the developer provides the needed transportation facilities or otherwise mitigates the trips from his project.

4. *Development Districts:* landowners may form development districts to finance the transportation improvements needed to pass AGP transportation tests.

5. *Alternative Review Procedure for Metro Station Policy Areas:* allows development in the compact areas atop Metro stations to meet policy area (staging ceiling) and local area (intersection) transportation test obligations by mitigating 50 percent of their trips, making a payment toward transportation improvements, and participating in the area's transportation management organization.

The second transportation test is called Local Area Transportation Review (LATR). Since the mid 1970s, the Planning Board has used LATR to determine if a proposed preliminary plan of subdivision will cause unacceptable local traffic congestion at nearby critical intersections. Local Area Transportation Review is required only for subdivisions which generate 50 or more weekday peak hour automobile trips.

In administering LATR, the Planning Board must not approve a subdivision if it finds that an unacceptable weekday peak hour level of service will result after taking into account existing and programmed roads and transit. If a proposed subdivision causes conditions at a nearby intersection to be worse than the standard, the applicant may make intersection improvements or provide trip reduction measures to bring the intersection back to the standard and gain preliminary plan approval. If

Why Grow?

the subdivision will affect an intersection or roadway for which congestion is already unacceptable, then the Planning Board may approve the subdivision only if it does not make the situation worse.

Intersection congestion is measured using a method called "critical lane volume (CLV)," which is the number of vehicles which can move through an intersection's conflicting through or left-turn ("critical") lanes in an hour.

Montgomery County's congestion standards for intersections vary by policy area. Like Policy Area Transportation Review, the LATR standards are based on the idea that less traffic congestion should be permitted in areas with lower transit service and use and more traffic congestion should be allowed in areas with greater transit service and use. For the rural policy areas, anything worse than 1450 CLV is unacceptable for LATR. For policy areas with the greatest level of transit service available, such as Metro station policy areas, the LATR standard is 1800 CLV. Other policy areas fall somewhere between the two standards, depending on the area's level of transit service and use.

Why Grow?

Why should Montgomery County, or any locality, grow at all? Some of the reasons identified by the Board:

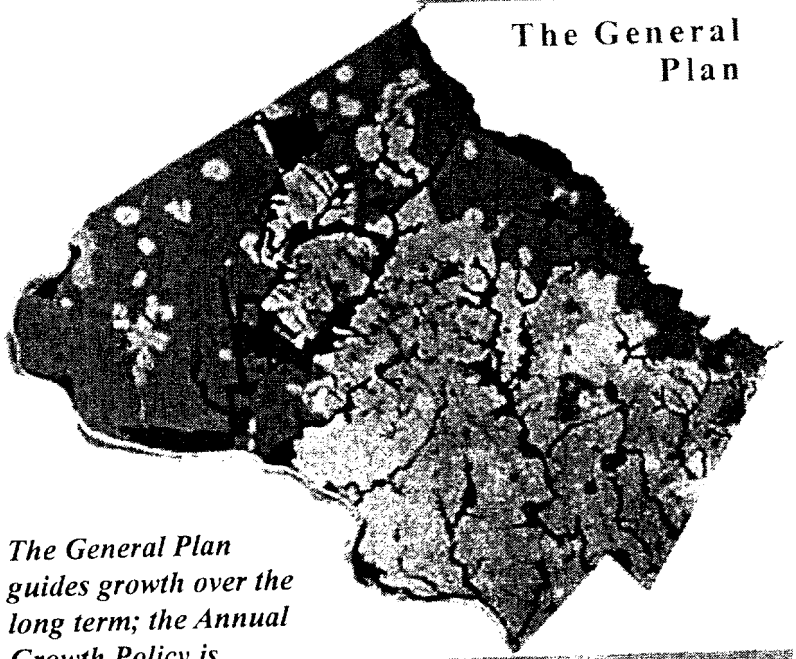
- Some additional growth is desirable and perhaps inevitable and the notion that a locality can just stop development is a fallacy;
- An economy needs some room to grow in order to stay vital;
- A maturing community depends on redevelopment to maintain its vitality and redevelopment often involves some growth;
- The United States Constitution provides rights to landowners to use their land;
- Growth may be necessary to provide the range of housing and jobs to support our share of the region's diverse population.

The County's major growth decisions are made in the County's long-range land use plans: the General Plan and area master plans and sector plans. The role of the Annual Growth Policy is to determine how quickly the jobs and housing units called for in the master plans can be built, based upon the availability of public facilities.

annual growth policy

Decisions about the amount, location, and type of growth are made in the County's long-term land use plans. The AGP determines how quickly planned jobs and housing units may be built, based upon the availability of public facilities.

The General Plan



The General Plan guides growth over the long term; the Annual Growth Policy is concerned with the timing of development and public facilities.

annual growth policy

Our roads and schools do not have the capacity to support additional growth, but some growth is necessary to safeguard the economic well-being of our residents. To minimize the effect of growth on public facilities, the AGP should set an overall limit on the pace of development, permitting the most efficient land uses to move forward first. All new development should help pay for new roads and schools through an impact tax.

Growth Policy Concept

The Montgomery County Planning Board's new approach for the Annual Growth Policy comes from the following findings:

Our roads and schools do not have the capacity to adequately support additional growth. This argues for...

...a total moratorium on new development until we can "catch up" with new transportation options and new schools. **But the County needs to allow some growth to safeguard the economic well-being of our residents**. So the Planning Board recommends that...

...the **AGP set an overall limit on the pace of approving preliminary plans** that is a reduction from the current pace but sufficient for economic vitality. The growth rate would be reviewed and set biennially; the Board recommends that the initial rate be set at 1 percent of existing development: 5,800 jobs and 3,625 housing units per year. To minimize the impact of development on congested facilities, the Planning Board recommends...

...**permitting the most efficient pattern of land use to move forward first.** This means concentrating development near transit and balancing jobs with nearby housing, and putting the lowest priority on approving development in rural areas, where auto use is highest and where people live the farthest from the daily destinations.

Because every new development project adds congestion to congested roads, and (with the exception of senior housing) all residential development adds students to a crowded school system...

...**all development should help pay for new roads and schools:** "everybody pays." The Planning Board proposes...

...**reformulating the existing development impact tax for transportation and adding a new development impact tax for schools.** For transportation, there would be **a base impact tax rate that all development would pay,** regardless of location. There would also be...

...**a second tier of the development impact tax for transportation** that would charge the most transportation-efficient development the least, and the least transportation-efficient development the most. Development near Metro stations might be charged a very low rate for this second tier of the development impact tax for transportation, while rural development might be assessed the highest rates. On the school side...

...the Planning Board is recommending that **there be a single Countywide development impact tax for schools.** With the possible exception of senior housing, all residential development would pay the impact tax for schools. With the institution of this tax, the Board proposes...

...**eliminating the current test for school adequacy.** Although school adequacy is extremely important, none of the many options for testing the adequacy of schools proved satisfactory. The Board believes that a development impact tax for schools is the best way to assess new development for its effect on school enrollment. The alternative, a moratorium on new residential construction, would be less

A New Approach

effective and have negative side effects, such as worsening the County's job-housing balance and potentially increasing the price of housing.

The revenues from both the transportation and school impact tax would be **dedicated to building transportation and school capacity improvements.**

The Planning Board believes **some concepts in the current AGP are effective and should be retained.** These concepts include...

...**testing development projects for their effect on nearby intersections** (currently called "Local Area Transportation Review"). The Board believes this test has required developers to make intersection improvements that are generally reasonable in cost and benefit the community. Another AGP concept worth saving is...

...**allowing developers to provide the transportation infrastructure needed to support their project.** Developer-funded infrastructure has been an important benefit , and the Planning Board recommends that this continue. Finally, the Planning Board also recommends that...

...**the AGP should continue to give preference to a very narrow set of land uses.** Preferential treatment is justified when development projects help meet County policy objectives, such as providing affordable housing and strategic economic development opportunities, or concentrating growth near transit. The exemptions supported by the Board are both narrower and fewer than those currently in effect.

Roads and Schools: At Capacity

Based on their comprehensive review, and through the public testimony received, the Montgomery County Planning Board has determined that congestion on the County's transportation network and enrollment in the County's public schools have both reached capacity. To effectively implement the Adequate Public Facilities Ordinance, the AGP should use a definition of "adequate" that conforms with the reasonable expectations of most County residents. The Planning Board believes that the County has reached or exceeded those levels for transportation and schools Countywide.

When the current AGP sets "staging ceilings," it is determining the amount of new development that the transportation network can handle, called "net remaining capacity." If net remaining capacity is a negative number, it means that transportation facilities are inadequate -- transportation improvements should be made before additional development is approved. The amount of transportation capacity available Countywide is the total of the areas with positive net remaining capacity and all of the areas with negative net remaining. This is the same as treating the County as a single area for setting staging ceilings. The result: if Montgomery County were treated as one big "policy area" under the AGP, it would be over-capacity for jobs and close to capacity for housing. The net remaining capacity for non-residential development is –10,115 jobs and +1,259 housing units. This is based on the ceilings in the FY 2004 AGP and approval activity through July 31, 2003.

To effectively implement the adequate public facilities ordinance, the AGP should use a definition of "adequate" that conforms with the reasonable expectations of most County residents. The Planning Board believes that the County has reached or exceeded those levels for transportation and schools Countywide.

annual growth policy

Countywide, the FY03 AGP's "net remaining capacity" (how much new development the transportation network can support) is 10,115 jobs and 1,259 housing units.

Roads and Schools: At Capacity

The map on this page shows congestion levels on Montgomery County roadways. The roads are colored red when their congestion levels are considered "severely congested." The roads colored gold are congested. Green roads are "nearly congested." The map shows that congested roads are found in all parts of the County (rural roads were not measured for this map).

The current AGP suggests that congestion varies widely by policy area when, in fact, congestion levels in around the County are fairly similar. The measure used by the AGP, the "average congestion index," can theoretically range from 0 to 1. However, most County areas score in a very narrow range, from 0.54 to 0.59.

Testimony at the Planning Board's public forums, as well as public comments made during the AGP focus groups, other AGP public meetings, and other public planning meetings, have all strongly shown that the public believes Montgomery County roads are congested. The AGP's standard of what is "adequate" must reflect how willing the public is to accept additional levels of congestion.

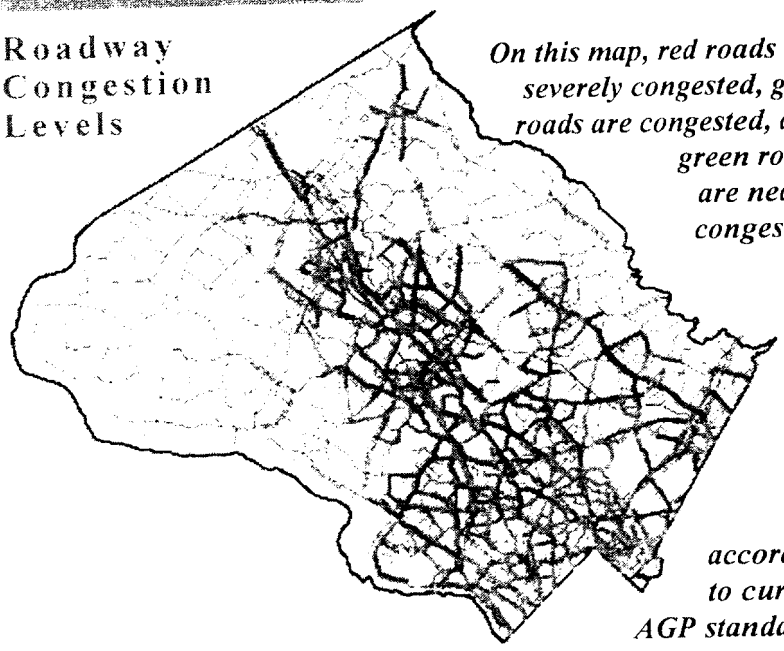
Public testimony also makes it clear that many parents do not consider their schools to be adequate. Although there is widespread recognition that new development is responsible for only a fraction of the County's enrollment growth, there is nevertheless also a strong belief that new development exacerbates an already difficult situation, and therefore must contribute toward new school buildings and classrooms.

The maps on the opposite page show, in orange, high school clusters where enrollment exceeds capacity at one or more levels (elementary, middle or high). The maps do not reflect the current AGP test's practice of "borrowing" capacity from an adjacent cluster to make up deficits. The maps suggest to the Montgomery County Planning Board that schools are generally over-capacity in Montgomery County.

Determining an Optimal Preliminary Plan Approval Rate

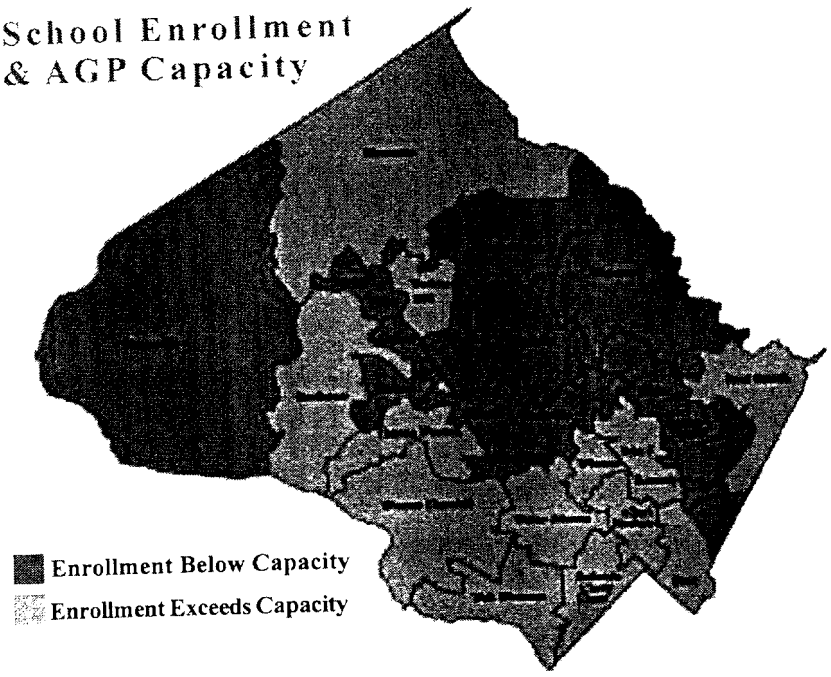
Although it finds that roads and schools cannot adequately support additional development, the Planning Board believes that a total moratorium on new development isn't feasible or smart (see "Why Grow?" on page 5). The Board therefore recommends that the new growth policy set a limit for the

Roadway Congestion Levels



On this map, red roads are severely congested, gold roads are congested, and green roads are nearly congested, according to current AGP standards.

School Enrollment & AGP Capacity



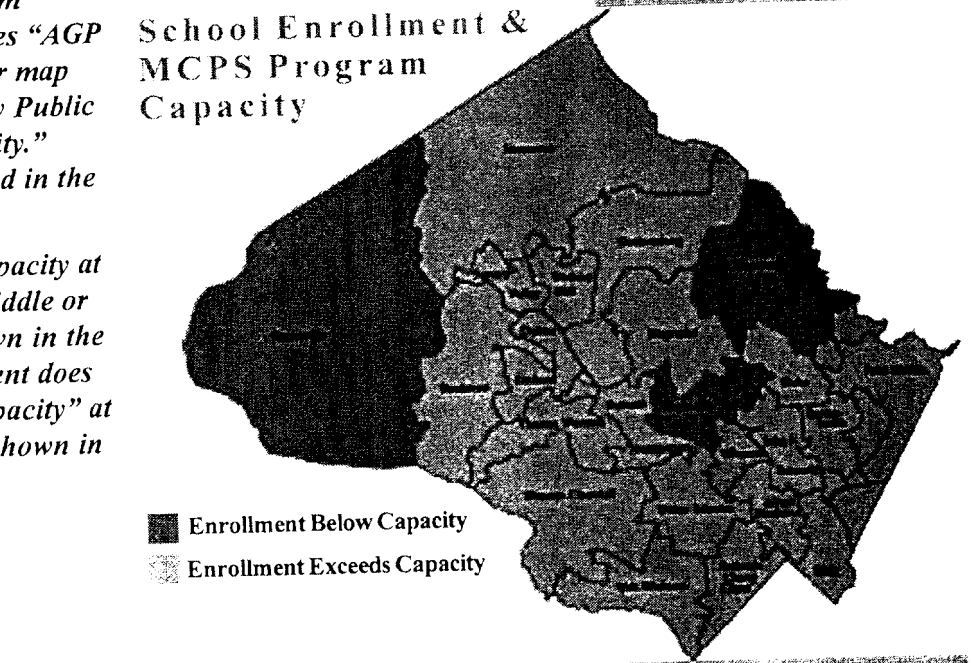
"AGP Capacity"
The AGP counts the capacity of a school using a standard multiplier for each classroom; for example, the capacity of all classrooms at the elementary level is 25.

"Program Capacity"
Montgomery County Public Schools uses "program capacity" for planning purposes. With "program capacity," the capacity of a classroom depends on its use; that is, how it is programmed. On average, *program capacity* is about 94% as large as *AGP capacity*.

These maps compare the 2008 school enrollment forecast with two measures of classroom capacity. The top map uses "AGP capacity," while the lower map uses Montgomery County Public Schools "program capacity." These terms are explained in the box on the upper right.

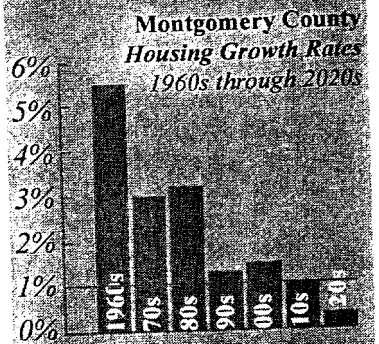
If enrollment exceeds capacity at any level (elementary, middle or high), the cluster is shown in the orange color. If enrollment does not exceed "program capacity" at any level, the cluster is shown in dark red.

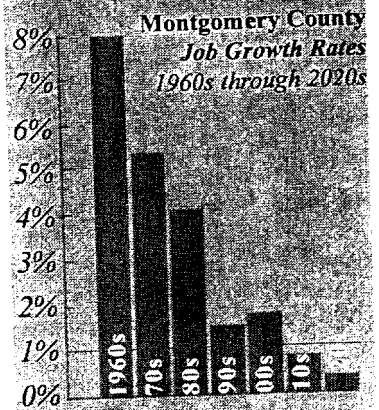
School Enrollment & MCPS Program Capacity



annual growth policy

To put a 1 percent preliminary plan approval rate in perspective: growth is now averaging about 1.3-1.5 percent but will decline to under 1 percent in the next decade.





Limiting Preliminary Plan Approvals

rate of approving new development (preliminary plans of subdivision). This rate would be reviewed on a biennial basis, taking into account current transportation and school conditions, prospects for new transportation and school facilities, and development that has already been approved or is not controlled by Montgomery County's APFO.

The Planning Board recommends that the initial growth rate be 1 percent. More specifically, the non-residential preliminary plan approval rate would be 1 percent of the current existing base of jobs. The residential development approval rate would be slightly more than 1 percent to achieve a balanced ratio of 1.6 jobs per housing unit.*

To put the 1 percent approval rate into perspective, it is useful to keep the following facts in mind:

- A 1 percent approval rate would allow enough non-residential development for 5,800 new jobs per year. Montgomery County averaged about 7,200 jobs per year in the 1990s and is forecast to add about 8,500 jobs per year between 2001 and 2010.
- The Board's recommendation would allow 3,625 new housing units per year. In the 1990s, Montgomery County averaged about 3,800 units per year. Between 2001 and 2010, the annual average (without limits) is expected to be 4,500 units.
- By the end of the decade, Montgomery County's market-driven growth rate for non-residential development is expected to average 1 percent, even without growth limits. One the housing side, a market-driven 1 percent growth rate is expected in about 2015.

The positive effects of the Planning Board's proposed limit on preliminary plan approvals are two-fold:

- in the near future, it will have a dampening effect on the pace of growth (over time, though, the County's natural growth rate will be less than 1 percent); and
- it will help smooth the market's tendency toward boom-bust cycles that hurt residents and business alike and add to the challenge of providing public facilities.

The Planning Board emphasizes that the preliminary plan approval rate would be reconsidered every other year. The County Council might decide to increase or decrease the annual growth rate after reviewing a "report card" of a variety of factors:

- Measures of transportation congestion and school crowding;
- Availability of money to construct new public facilities;
- Economic conditions, including recession;
- Changes in enrollment or transportation use;
- The pace of growth in nearby localities that will generate demand for County facilities;
- Demographic trends, such as providing jobs and housing for Montgomery County residents reaching adulthood who want to remain in the County; and
- The amount and character of already-approved development.

*on average, there are 1.6 workers per household in Montgomery County.

Efficient Land Uses First

The Planning Board envisions that the biennial reconsideration of the target growth rate will provide a new and much-needed forum for the public, development industry representatives, and public officials to engage in a true dialog about growth. It will allow the AGP to become a true "growth policy" where the County can take into account all of its growth-related policies when setting growth limits.

Allocating Limited Growth: How and Where?

Key to the Planning Board's concept is the idea that, because transportation facilities are overutilized, the growth policy's allocations should give preference to the most efficient land use patterns first.

From a transportation perspective, the most efficient land use patterns include a balanced mix of jobs and housing in proximity to each other served by as many transportation options (roads, transit, pedestrian) as possible. The least efficient land use pattern is characterized by low densities of similar land uses.

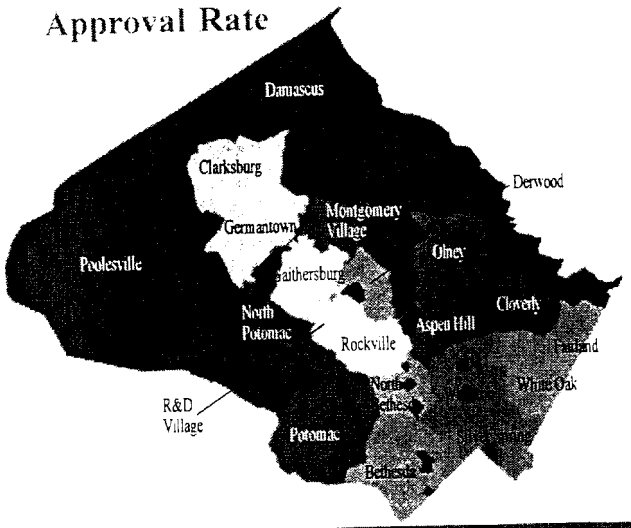
Therefore, a mixed-use development project near a Metro station will be more efficient than a similar project that is not well-served by transit, and both of these are more efficient than a low-density residential development located among similar developments.

To give priority to the most efficient land uses, the Planning Board has developed a set of geographic subareas that would receive varying shares of the Countywide preliminary plan approval rate. These subareas are shown on the map below.

Some of the criteria that the Planning Board used to determine the appropriate geographic boundaries are:

- the boundaries portray the relative transportation efficiency of locations within the County;
- the boundaries recognize that land within the same boundary will be competing for a limited growth allocation;

Subareas for Allocating the Countywide Preliminary Plan Approval Rate



- Rural
- Lower growth suburban
- Fairland/White Oak
- Higher growth suburban
- Red line areas - west
- Red line areas - east
- Metro station areas - west
- Metro station areas - east

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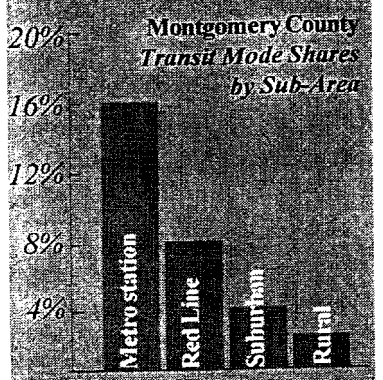
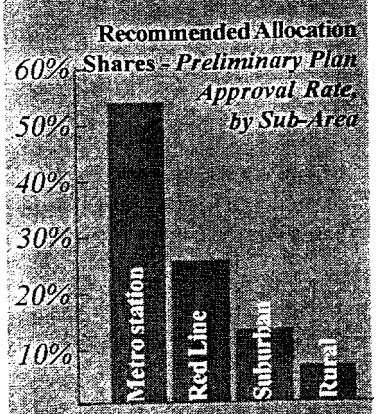
The most efficient land use patterns include a balanced mix of jobs and housing in proximity to each other served by as many transportation options (roads, transit, pedestrian) as possible.

annual growth policy





Limiting Approvals by Area

- the boundaries permit allocations that encourage a jobs/housing balance in the area; and/or
- the boundaries encompass areas with similar transportation characteristics, such as transit mode share or are part of the same "traffic shed."

One of the main tasks of the biennial growth rate review would be the determination of how much of the allowed growth would be allocated to each geographical area. The Planning Board suggests that the primary criterion for making these allocations would be transportation efficiency as represented by transit mode share; that is, percentage of commuters using transit rather than automobiles to get from home to work and back again. Currently, Metro station areas have twice the transit mode share as Red Line areas; the Red Line areas have twice the transit mode share as the suburban areas (higher-growth suburban, lower-growth suburban, and Fairland/White Oak); and the suburban areas have twice the transit mode share as the rural areas. As a starting point, then, the Planning Board recommends that the largest number of annual preliminary plan approvals be allocated to Metro station areas. Preliminary plan approvals allocated to Red Line areas would be about half that allocated to Metro station areas; approvals allocated to suburban areas would be about half that allocated to Red Line areas; and approvals allocated to rural areas would be about half that allocated to suburban areas.

Recommended Allocations: One Percent Approval Rate

Area	Jobs	Housing
Metro Station Areas	3,100	1,925
Red Line Areas	1,550	950
Suburban Areas	775	475
Rural Areas	375	275
Total	5,800	3,625

The Planning Board recommends allocating the preliminary plan approval rate of 5,800 jobs and 3,625 jobs to the recommended geographies in proportion to transportation efficiency, as represented by the transit mode share. Using a proposed preliminary plan approval rate of 1 percent would result in the allocations shown in the box on this page. These approvals would be available to development on a first-come, first-served basis.

The biennial review could modify this basic allocation strategy based on a number of factors, including factors similar to those used to develop the overall growth rate (economic conditions, already-approved development, planned capital expenditures) as well as those that were used to determine the geographical boundaries. So, for example, while the transportation efficiency criterion would support allocating most new development approvals to Metro stations, the jobs/housing balance criterion might suggest that more jobs be allocated to the east and more housing to the west.

When Approvals Reach the Limit

Because a limited amount of new development will be permitted to be approved under the Board's proposal, there will be instances when an area's allocation will be drawn down to zero by development approvals. When this happens, the Planning Board would suspend preliminary plan approvals in that area until the next allocation occurs. If, for example, a proposed development consists of 300 housing units and there are only 200 housing units available under the current year's

Approvals Above the Rate

allocation, the development would be able to reserve the 200 units and be first in line for the next year's allocation. When there is an insufficient number of jobs or housing units remaining in an area, a developer would have the option of moving ahead more quickly if he or she agrees to mitigate 100 percent of the transportation impact of the proposed development -- either by providing transportation facilities or reducing trips or a combination of the two.

The Planning Board recommends continuing a limited set of provisions that would allow more jobs or housing units to be approved than the annual preliminary plan approval rate. These limited circumstances are:

- *Affordable housing:* The Planning Board recommends allowing a limited number of housing units to be approved above the annual allocation if the developer agrees to provide a substantial component of affordable housing. The Board's proposal is virtually the same as the current growth policy's affordable housing provision, although some modest changes will need to be made to conform to the new geographies.

- *Economic Development:* The Planning Board recommends continuing most of the current growth policy's provisions for economic development projects. These allow approvals above the annual allocation in very limited circumstances for only the most desirable economic development projects, such as expansion of major headquarters facilities and specially-designated strategic economic development projects. The Board would eliminate the no-longer-needed provision for hotels supporting headquarters, and would eliminate the hospital and child day care provisions as lacking sufficient justification.

- *Metro station areas:* The Planning Board recommends continuing, with modification, the current growth policy's provision for Metro station area development. This provision allows approvals above the annual allocation at Metro stations if the developer mitigates 50 percent of the automobile trips and makes a payment toward transportation facility improvements. The Board believes that without this provision, the growth policy would undermine the County's smart growth objectives. However, the Board recommends suspending residential approvals under this provision in any Metro area where schools are at capacity and there is no feasible school capacity improvement. The Board also suggests replacing the requirement for a government-funded comprehensive traffic study with a requirement that each developer submit a traffic study to identify needed transportation improvements.

Size of the Pipeline of Approved Development

The amount of development in Montgomery County that has already been approved (the "pipeline of approved development") considerably limits the ability of the new growth

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The Planning Board recommends some very limited provisions that give approval preference to development projects that implement the County's goals for affordable housing, provide special economic development opportunities, or support smart growth.

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Impact taxes or fees charged by other Maryland counties range from $1,500 to $12,000 per detached home and from $750 to $1,789 per 1,000 square feet of office space.

Impact Tax/Fee Rates For a Single Family Detached Home

County	Rate
Prince George's	$7-12,000
Charles	$9,700
Frederick*	$7,446
Queen Anne's	$5,744
Carroll	$4,774
St. Mary's	$4,500
Anne Arundel	$4,069
Calvert	$3,950
Howard	$2,640
Caroline	$1,500

Impact Tax/Fee Rates For a Square Foot of Office Space

County	Rate
Queen Anne's	$1.27-1.53
Anne Arundel	$1,11-1.79
Howard	$0.80
Frederick	$0.75

**estimated. Frederick applies a per-square-foot rate.*

"Pipeline" Development

policy to pace development. The County's pipeline contains over 77,000 jobs and about 24,000 housing units, not counting development approved in Gaithersburg, Rockville, and in adjacent counties. All of this development will have an impact on a transportation network and school system that the Board finds to be at capacity.

The Planning Board considers this a major issue and believes that all aspects of the pipeline should be reviewed. However, because so many growth policy issues are on the table this year, the Board was persuaded to recommend that pipeline issues be addressed comprehensively in 2004. The Board is especially interested in considering further reductions in the time limit for a finding of adequate public facilities, in applying a time limit to pre-1989 residential approvals, and in reviewing whether the extension provisions are working as intended.

Development Impact Taxes for Transportation and Schools

Park and Planning staff estimate that the current cost for planned transportation improvements in Montgomery County is $5.9 billion. If all of that cost were allocated to the 146,000 jobs and 78,000 housing units to be built between now and 2030, the per-job and per-unit cost of that infrastructure would be about $26,000.

The cost to build school buildings for the 31,200 public school students living in those 78,000 housing units is $808 million, or about $10,300 per housing unit. The Planning Board recognizes that $26,000 per job and $36,300 per housing unit is not a feasible impact tax, but notes that these figures demonstrate the magnitude of the challenge.

Currently, Montgomery County imposes an impact tax on new development to fund transportation improvements. The tax is applied Countywide, including on development within the cities of Gaithersburg and Rockville. Rates vary by area and by land use type and are shown in the table below. In the spring of 2003, the Montgomery County Council reviewed proposals to increase the transportation impact tax and to institute a school impact tax. The Council decided to defer discussion of impact taxes until the fall review of the Annual Growth Policy.

The Planning Board's growth policy strategy depends not only on moderating the rate of development approvals but also increasing the financial resources available to construct needed facilities. The Planning

Current Impact Tax Rates in Montgomery County

	Residential			*Non-Residential*		
Area	**Detached**	**Town**	**Apt.**	**Office**	**Retail**	**Indust.**
Eastern Montgomery	$1,727	$1,727	$1,243	$2	$1.50	$1.00
Clarksburg	$2,753	$2,753	$1,981	$2	$5.61	$1.00
Germantown	$2,492	$2,492	$1,794	$2	$5.08	$1.00
Metro station areas	$1,050	$1,050	$550	$0.75	$0.75	$0.50
Balance of County	$2,100	$2,100	$1,100	$1.5	$1.5	$1.00

Residential rates per unit; non-residential rates per square foot

Impact Taxes

Board, therefore, recommends that the County increase the rates of development impact tax for transportation and establish a development impact tax for schools. The Board strongly recommends that these new revenues be dedicated to funding transportation and school capacity improvements. The Board further recommends that the increase in the recordation tax be dedicated to school construction.

The Planning Board's recommended impact tax rates are shown in the table on this page. The Planning Board is sensitive to the effect of additional taxes on the cost of development, especially housing affordability, and the Board understands that there are a host of other factors contributing to traffic congestion and school enrollment growth in addition to new development. However, the Board notes that each additional increment of new development will require additional transportation and school facilities, and the Board's proposed rates provide an appropriate balance between needed revenues and ability to pay. The Board's rates also provide a balance between jobs and housing so that, even with the school impact tax, both residential and non-residential development are paying a similar percentage of sales prices or rents in impact taxes.

The Planning Board recommends a new structure for the transportation impact tax that reflects the relative impact of new development on the

Proposed Transportation Impact Tax Rates

	Residential				
Area	**Detached**	**Town**	**Apt.**	**Senior**	**MPDUs**
Metro station area	$1,500	$1,500	$1,000	$500	$0
Red Line area	$3,000	$3,000	$2,000	$1,000	$0
Suburban area	$4,500	$4,500	$3,000	$1,500	$0
Rural area	$6,000	$6,000	$4,000	$2,000	$0

Residential rates per unit; "Senior" means multi-family senior housing; "MPDU" means "moderately-priced dwelling unit" as defined by County law.

	Non-Residential				
Area	**Office**	**Retail**	**Indust.**	**Bio/Hosp**	**Other**
Metro station area	$2	$3	$2	$0	$2
Red Line area	$4	$6	$4	$0	$4
Suburban area	$6	$9	$6	$0	$6
Rural area	$8	$12	$8	$0	$8

Non-residential rates per square foot; "Bio/Hosp" means bioscience facilities or hospitals.

Proposed School Impact Tax Rates

	Residential					
Area	**Detached**	**Town**	**Garden**	**High-rise**	**Senior**	**MPDUs**
All areas	$8,000	$6,000	$4,000	$1,600	$0	$0

Residential rates per unit; "Senior" means multi-family senior housing; "MPDU" means "moderately-priced dwelling unit" as defined by County law.

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The Planning Board strongly recommends that these new impact tax revenues be dedicated to funding transportation and school capacity improvements. The Board further recommends that the increase in the recordation tax be dedicated to school construction.

Dedicated Revenues For New Facilities

transportation network. Under the Board's proposal, the transportation impact tax rates would be lowest in Metro station areas and highest in rural areas, consistent with the relative transit use of development in these areas.

The Board would continue to apply the tax at building permit to all approved development, and would not expand the credit provisions of the impact tax.

When housing developments contain a threshold number of affordable units, both the affordable and market rate units are currently exempt from the transportation impact tax. The Board recommends that in the future only the affordable units themselves be exempted from the transportation and schools impact taxes.

The Planning Board is recommending that school impact taxes be the same countywide, but they would vary by housing type. The Planning Board's proposal is very similar to school impact tax legislation introduced this spring, with the exception that the Planning Board's recommended rates are significantly higher.

An issue that is ordinarily outside the purview of the Planning Board is whether the proceeds from the recent increase in the recordation tax should be dedicated to school construction. However, several Councilmembers and the Board of Education have requested that the Planning Board consider the issue, and the Board's recent growth policy review has given the Board extensive information about both the need for new school infrastructure as well as the increase in school enrollment due to housing turnover. Therefore, the Planning Board is comfortable recommending that the recordation tax increase be dedicated to school construction.

Get Involved

Montgomery County's growth policies affect the quality of life of every resident and business. For that reason, the Planning Board urges everyone who can do so to get involved by following the discussions and submitting their comments and questions. The Planning Board recognizes that changes of this magnitude require careful thought and comprehensive public input. While the Board believes we have made an excellent start, we are looking forward to the Executive's comments on our proposal, to participating in the County Council's scheduled public outreach efforts, and to responding to questions and issues raised by public officials and residents. The public is welcome to contact the Planning Board by mail at the address on this page or through our website.

Growth Policy Review Coming Events

September 13 (day)
Growth Policy Teach-in

September 16 and 18 (evening)
County Council's Growth Policy Public Hearings

September 22 and 29 (day)
Council's Planning, Housing and Economic Development Committee

September 24 (evening)
Council "Town Hall" Meeting in Friendship Heights/Chevy Chase

September 25 (day)
Council's Management & Fiscal Policy Committee

All events are tentative. Please check schedule by calling the Count Council at 240-777-7900 or check the County Council website at www.montgomerycountymd.gov.

County Council to Hold Growth Policy "Teach-in"

continued from page 1

Subin. "In order to make these decisions, we need to hear from as many County residents as possible and make sure that everyone knows what's at stake. This teach-in will represent the start of that process."

A tape of the event will be aired on County Cable Montgomery, Channel 6.

Following up on the teach-in, the Council has scheduled public hearings on the Annual Growth Policy on the evenings of September 16 and 18. Growth Policy revisions will also be on the agenda when the Council holds the next of its "Town Hall" meetings on September 24, this time in Friendship Heights/Chevy Chase.

Council worksessions on the Annual Growth Policy will begin in late September with final Council approval expected in late October.

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CITY OF LAUREL
SUBDIVISION Regulation FROM the CODE

Sec. 14-6. Review procedure; adequate public facilities.

a. This review procedure is provided to establish a process that will enable the City of Laurel to determine the adequacy of roads and other public facilities in order to achieve the goals and objectives of the duly adopted master plan of the city. The basis of the procedure is to require the assessment of public services and facilities and the project's consistency in regard to the city's and other capital improvement plans, water and sewer plans, and other agencies having jurisdiction for the provision of public improvements. Given the regional location of the City of Laurel, the Planning Commission may give consideration to any interjurisdictional effects of projects being reviewed, such as traffic impact, which can be shown by the addition of the proposed development.

Among the growth management plans utilized by the City of Laurel, the Commission may consider the goals and objectives of the following policies, ordinances and plans which are contained within the:

(1) Duly adopted Master Plan for the City of Laurel;

(2) Provisions of the City of Laurel Zoning Ordinance;

(3) The annual Capital Improvement Program of the City of Laurel; and

(4) The Capital Programs and Master Plans of surrounding jurisdictions, when such facilities may be impacted in the view of the Planning Commission, or shown by the applicant's required adequate public facility analysis.

b. Before preliminary approval may be granted for any subdivision plat or site development plan, regardless of the zoning classification of the property involved, the planning commission must find that sufficient public facilities and services exist or are programmed for the area. It is the intent of this section that public facilities and services should be adequate to preclude danger or injury to the health, safety and welfare and excessive expenditure of public funds.

(1) The planning commission shall give due weight to the potential of the proposed subdivision or site development in relation to the surroundings, including the nature, extent and size of the proposed subdivision or development, the estimated increase in population, the anticipated timing of the development of the land proposed for subdivision, the degree of urbanization or development within a reasonable distance of the subject property, given the size and density of the proposed subdivision or development, and the following factors:

(a) The availability of existing or programmed sewage or water mains.

(b) The potential effect of the proposed subdivision on the efficient and economic operation of existing or programmed public facilities.

(c) The distance of any necessary extension of sewage and water facilities through unsubdivided lands which are indicated for eventual development on an approved plan.

(d) The location of the proposed subdivision in respect to the approved Prince George's County Ten Year Water and Sewage Plan, or in any plan which designates the timing of construction of facilities.

(e) The availability of access roads adequate to serve traffic which would be generated by the subdivision, or the presence of a proposal for such road(s) on an adopted master or comprehensive plan and in the current capital improvement program or the State Roads Commission program.

(f) The availability within a reasonable distance, and the adequacy of school, fire, police, utility, and park and recreation services.

(2) Facilities shall be deemed programmed if they are included in an adopted capital improvement program, and that there is a reasonable expectation that the project will be funded for construction. The term "Capital Improvement Program" may be construed to include those capital improvement programs of the City of Laurel, Prince George's County or other surrounding counties, the Washington Suburban Sanitary Commission, or the Consolidated Transportation Program of the Maryland Department of Transportation.

(3) Subdivisions or developments which meet the following criteria shall be deemed adequate in regard to water and sewage facilities subject to preliminary approval or status within the Washington Suburban Sanitary Commission:

(a) The proposed density is in accord with an adopted plan, and

(b) The plat of subdivision proposes to divide the land area into lots with a minimum size of two (2) or more acres; it being permissible however, that lots of lesser size may be supplemented in the amount of such deficiency by the creation of an easement(s) on adjoining areas that will establish a total area of two (2) acres for each individual sewage system, and

(c) Soil and topographic conditions indicate that an individual sewerage system(s) can function satisfactorily, subject to any county, state or regional regulations which may apply.

(d) Individual water and sewer systems must be capable of meeting all local, county, and state requirements regarding water pressure, requirements for sprinkler systems, and any other public safety standards and requirements.

c. In addition to the requirements of subsection 14-6b. above, all applications for approval of any subdivision or site development of residential land containing five (5) acres or more, or which provide for ten (10) or more dwelling units, or commercial, office, or industrial developments which are proposed on land area which exceeds twenty-five thousand (25,000) square feet, shall be accompanied by an adequate public facilities study which shall be prepared by the applicant and reviewed by the Planning Commission staff in accordance with standards and guidelines generally accepted by local governments. An adequate public facilities study shall be prepared by qualified professionals and technicians and shall address the following:

(1) The traffic impact of the proposed subdivision or development;

(2) The impact on police facilities, fire and rescue facilities and other public safety facilities;

(3) The impact on all schools, libraries and other public facilities within a reasonable distance of the proposed subdivision or development;

(4) Adequacy of open space and recreational facilities in relation to the proposed subdivision or development; and

(5) A fiscal impact analysis which shall include anticipated revenues and costs for government services, capital improvements to be provided by the developer and government agencies, staging of development, and staging of programmed facilities.

(6) Estimations for fiscal impact and capital contributions for public facility impacts shall be submitted to include, if applicable, the pro rata share, or estimated proportionate share of the applicant's impact, using applicable standards, on any particular service or facility.

d. In lieu of requiring an applicant to construct or pay the cost of construction of public facilities in connection with the proposed subdivision in situations in which it would not be equitable to impose the entire cost on the applicant because of the limited impact of the proposed subdivision or development on those public facilities, the Planning Commission may require the applicant to pay a fee to the city based on an equitable allocation or apportionment that the proposed subdivision would have on those public facilities. The amount of any such fee shall bear a reasonable relationship to the anticipated impact of the proposed subdivision or development on public facilities. Such fees shall be paid to a fund specifically designated for public facilities, and such fund may only be used by the city for such purposes, upon approval by the Mayor and City Council.

e. Whenever the provisions of the Laurel Forest Conservation Code, as set forth in Chapter 6A of the Laurel City Code, are applicable, all such applicable provisions of Chapter 6A shall be complied with in conjunction with the subdivision proceedings of this Chapter 14 of the Laurel City Code relating to subdivisions.

(Ord. No. 1079, 12-14-92; Ord. No. 1136, 4-24-95)

Sec. 15-6. Review procedure; adequate public facilities.

a. This review procedure is provided to establish a process that will enable the City of Laurel to determine the adequacy of roads and other public facilities in order to achieve the goals and objectives of the duly adopted master plan of the city. The basis of the procedure is to require the assessment of public services and facilities and the project's consistency in regard to the city's and other capital improvement plans, water and sewer plans, and other agencies having jurisdiction for the provision of public improvements. Given the regional location of the City of Laurel, the Planning Commission may give consideration to any interjurisdictional effects of projects being reviewed, such as traffic impact, which can be shown by the addition of the proposed development.

Among the growth management plans utilized by the City of Laurel, the Commission may consider the goals and objectives of the following policies, ordinances and plans which are contained within the:

(1) Duly adopted Master Plan for the City of Laurel;

(2) Provisions of the City of Laurel Zoning Ordinance;

(3) The annual Capital Improvement Program of the City of Laurel; and

(4) The Capital Programs and Master Plans of surrounding jurisdictions, when such facilities may be impacted in the view of the Planning Commission, or shown by the applicant's required adequate public facility analysis.

b. Before preliminary approval may be granted for any subdivision plat or site development plan, regardless of the zoning classification of the property involved, the planning commission must find that sufficient public facilities and services exist or are programmed for the area. It is the intent of this section that public facilities and services should be adequate to preclude danger or injury to the health, safety and welfare and excessive expenditure of public funds.

(1) The planning commission shall give due weight to the potential of the proposed subdivision or site development in relation to the surroundings, including the nature, extent and size of the proposed subdivision or development, the estimated increase in population, the anticipated timing of the development of the land proposed for subdivision, the degree of urbanization or development within a reasonable distance of the subject property, given the size and density of the proposed subdivision or development, and the following factors:

(a) The availability of existing or programmed sewage or water mains.

(b) The potential effect of the proposed subdivision on the efficient and economic operation of existing or programmed public facilities.

(c) The distance of any necessary extension of sewage and water facilities through unsubdivided lands which are indicated for eventual development on an approved plan.

(d) The location of the proposed subdivision in respect to the approved Prince George's County Ten Year Water and Sewage Plan, or in any plan which designates the timing of construction of facilities.

(e) The availability of access roads adequate to serve traffic which would be generated by the subdivision, or the presence of a proposal for such road(s) on an adopted master or comprehensive plan and in the current capital improvement program or the State Roads Commission program.

(f) The availability within a reasonable distance, and the adequacy of school, fire, police, utility, and park and recreation services.

(2) Facilities shall be deemed programmed if they are included in an adopted capital improvement program, and that there is a reasonable expectation that the project will be funded for construction. The term "Capital Improvement Program" may be construed to include those capital improvement programs of the City of Laurel, Prince George's County or other surrounding counties, the Washington Suburban Sanitary Commission, or the Consolidated Transportation Program of the Maryland Department of Transportation.

(3) Subdivisions or developments which meet the following criteria shall be deemed adequate in regard to water and sewage facilities subject to preliminary approval or status within the Washington Suburban Sanitary Commission:

(a) The proposed density is in accord with an adopted plan, and

(b) The plat of subdivision proposes to divide the land area into lots with a minimum size of two (2) or more acres; it being permissible however, that lots of lesser size may be supplemented in the amount of such deficiency by the creation of an easement(s) on adjoining areas that will establish a total area of two (2) acres for each individual sewage system, and

(c) Soil and topographic conditions indicate that an individual sewerage system(s) can function satisfactorily, subject to any county, state or regional regulations which may apply.

(d) Individual water and sewer systems must be capable of meeting all local, county, and state requirements regarding water pressure, requirements for sprinkler systems, and any other public safety standards and requirements.

c. In addition to the requirements of subsection 15-6b. above, all applications for approval of any subdivision or site development of residential land containing five (5) acres or more, or which provide for ten (10) or more dwelling units, or commercial, office, or industrial developments which are proposed on land area which exceeds twenty-five thousand (25,000) square feet, shall be accompanied by an adequate public facilities study which shall be prepared by the applicant and reviewed by the Planning Commission staff in accordance with standards and guidelines generally accepted by local governments. An adequate public facilities study shall be prepared by qualified professionals and technicians and shall address the following:

(1) The traffic impact of the proposed subdivision or development;

(2) The impact on police facilities, fire and rescue facilities and other public safety facilities;

(3) The impact on all schools, libraries and other public facilities within a reasonable distance of the proposed subdivision or development;

(4) Adequacy of open space and recreational facilities in relation to the proposed subdivision or development; and

(5) A fiscal impact analysis which shall include anticipated revenues and costs for government services, capital improvements to be provided by the developer and government agencies, staging of development, and staging of programmed facilities.

(6) Estimations for fiscal impact and capital contributions for public facility impacts shall be submitted to include, if applicable, the pro rata share, or estimated proportionate share of the applicant's impact, using applicable standards, on any particular service or facility.

d. In lieu of requiring an applicant to construct or pay the cost of construction of public facilities in connection with the proposed subdivision in situations in which it would not be equitable to impose the entire cost on the applicant because of the limited impact of the proposed subdivision or development on those public facilities, the Planning Commission may require the applicant to pay a fee to the city based on an equitable allocation or apportionment that the proposed subdivision would have on those public facilities. The amount of any such fee shall bear a reasonable relationship to the anticipated impact of the proposed subdivision or development on public facilities. Such fees shall be paid to a fund specifically designated for public facilities, and such fund may only be used by the city for such purposes, upon approval by the Mayor and City Council.

e. Whenever the provisions of the Laurel Forest Conservation Code, as set forth in Chapter 6A of the Laurel City Code, are applicable, all such applicable provisions of Chapter 6A shall be complied with in conjunction with the subdivision proceedings of this Chapter 15 of the Laurel City Code relating to subdivisions.

(Ord. No. 1079, 12-14-92; Ord. No. 1136, 4-24-95; Ord. No. 1250, 1-12-98)